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BOARDWATCH

GUIDE TO THE WORLD OF ONLINE SERVICES

MAGAZINE

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John Friel of QModem (left)
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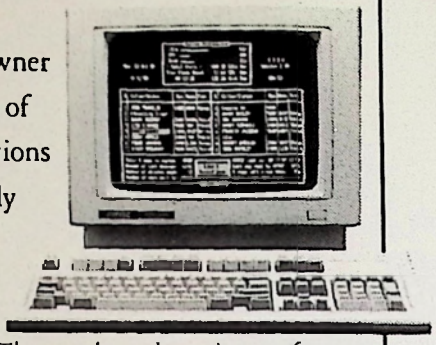

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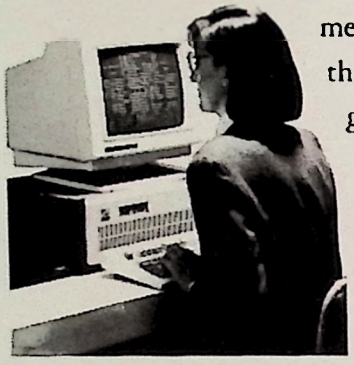

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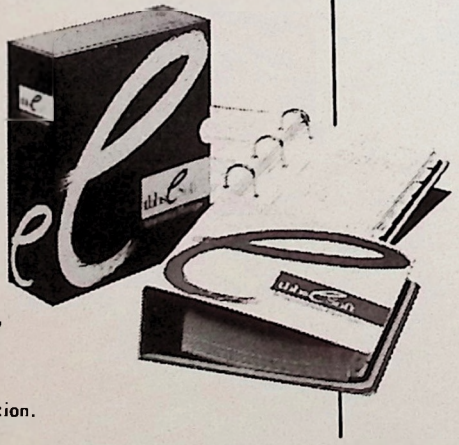

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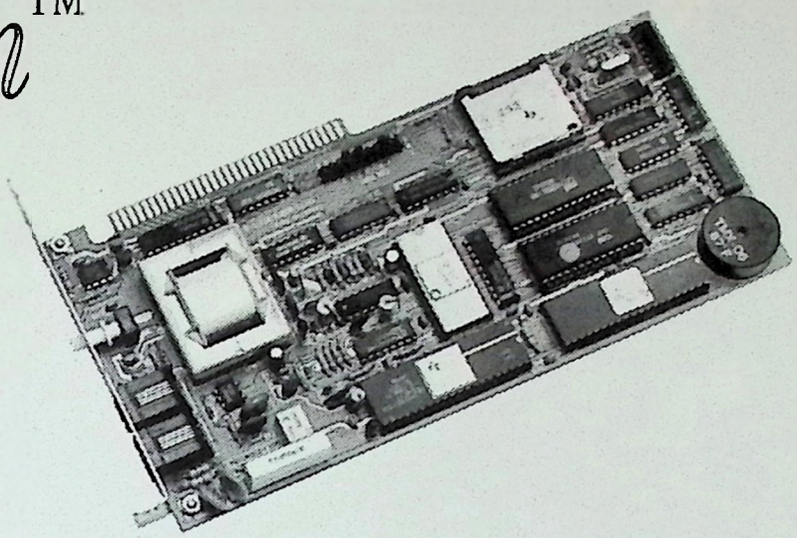

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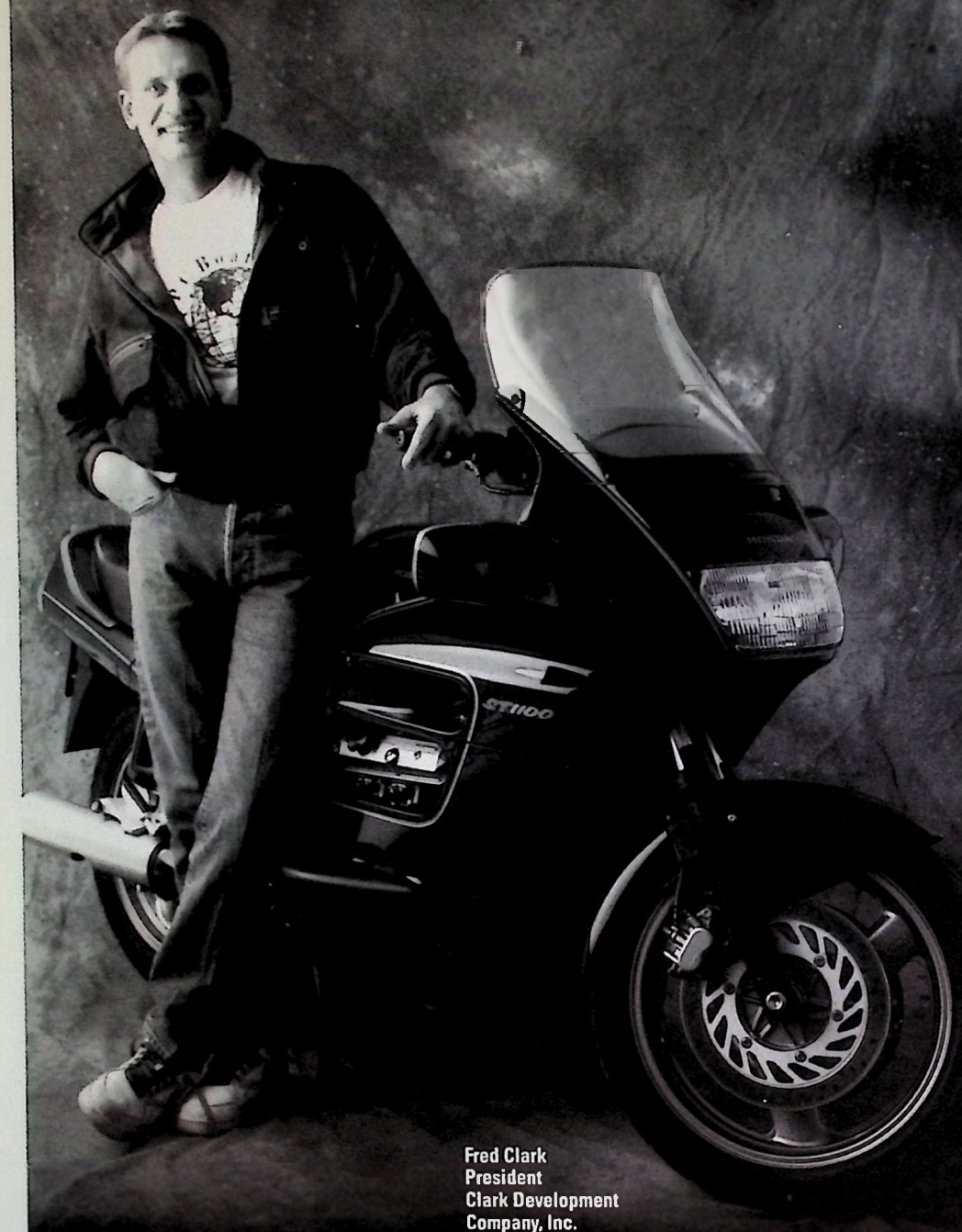

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PC MAGAZINE
EDITORS' CHOICE
September 10, 1991
PCBoard, Version 14.5

BOARDWATCH MAGAZINE

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EDITOR'S NOTES

IBM, MCI, INTERNET, AND NREN.

A growing controversy roils around the National Research and Education Network proposed by Senator Al Gore as part of the High Performance Computer Act. It's become enmeshed with the future of the Internet, the perceived greed of IBM and MCI, the general robber baron mentality of the telephone companies, the bureaucracy of the government, the ivory towerism of the University and Education communities, and the general and profound confusion of everyone concerned regarding what the Internet is, what it should be, who should control it, who should pay for it, and one guy in New Mexico who is looking for a reliable source of Jerry's Ice Cream and happened to wander into the debate by accident.

After reading through roughly twelve zillion anguished messages - most revolving around two concepts: "they're going to take away my free e-mail" - and "somebody is going to make money off of this and it might not be me", I've pretty much come to the conclusion that it doesn't matter a great deal. At least for the present, we're going to draw a by on the wailing into the night over NREN/Internet.

But we will pass on the basic scenario so you can do some night wailing if you're so moved.

The reason the Internet and connected networks will continue to grow in importance is that they've reached a critical mass of some 25 million e-mail users. We're months away from a situation where if you're not connected to it, you can characterize yourself as engaged in electronic masturbation. We reached this point because the government essentially paid the freight for a national backbone called the National Science Foundation Network (NSFNet) linking some twenty odd sites around the United States. Universities, government agencies, research centers, and yes, companies, tied into this national network to exchange information in the form of data. This relatively tiny backbone has been leveraged into global connectivity with everyone scrambling to hook up - from national networks down to 5-man office LANs. And the U.S. Government is on the verge of pouring $1.5 billion of figurative gasoline on this firestorm of connectivity.

The NSF backbone is actually operated by a not-for-profit entity known as Advanced Network Services (ANS) - a triumvirate made up of Merit, MCI, and IBM. AT&T, who was banned from subsidizing the network by regulatory restrictions, had bid some $40 million to do this. ANS basically bought into the contract with a bid of some $5 million. Additionally, connections to the network at the regional level are made up of a hodgepodge of companies and Universities with funding from individual state governments and NSFNet grants. The bottom line is that a lot of different entities contributed to fund this network, but the real heartbeat of the project was your tax dollars.

The quandary is that there is currently no market for this service sufficient, even now, for any company to make the necessary capital investment to build it with any hopes of profit in the near term. And if the government funds it, as it appears it will via $1.5 billion in the High Performance Computing Act, there is no way for those same companies to gracefully profit from it later when there is sufficient market, as everyone seems to agree there will be. Everyone has a pretty good idea that the Internet is a good thing and that eventually it will be an important thing rivaling our existing telephone network in scope, utility, and function. No company wants to be left out, and none really wants to pay for it by themselves. Ideally, they would like the government to build it and then give it to them so they can profit from it later. Visions of this will cause the major players to pile money on top of the government money. So this may be the greatest opportunity since the space race to leverage government dollars into a massive flurry of commercial investment.

The current fear in the Internet community is that the current NSFNet backbone contract is running out and that NREN, the heir apparent, will turn out to be a massive welfare program for IBM/MCI. They fear that IBM is watching it's computer world market share and profits shrink and intends to resume its rightful position as the king of the hill by taking over and controlling the Internet and by extension ALL networking in the free world. And finally, they fear that IBM/MCI's only interest in doing so is to sell networking to the Fortune 1000 and eliminate access for individuals. IBM will leverage the existing Internet into an entire new market for themselves through their ANS subsidiary. Perhaps.

Arrayed against IBM/MCI/Merit is BellCorp, with a rival technology, and CIX, a partnership of PSI, UUNET, CERFNet, and possibly U.S. Sprint. It has been characterized as a dance of elephants where the common man with a modem can only get stomped on and where the winner carries away an unregulated monopoly.

I don't agree with this scenario but I do understand the thinking behind it. IBM probably will be a major player. That would certainly be different? Most Internet users secretly fear it's "too good to be true" because broadly speaking, they get free long distance and free global e-mail from it now - or at least they perceive it to be free. And since it must be too good to be true, someone must be about to take it away from them. The reason I don't concur is a bit roundabout, but I'll give it a shot.

Government funding of this proposed data highway, is at least as appropriate as it was for our Interstate highway system, and for all the same reasons. The primary difference is that after it is built, the data highway will continue to grow wider through the increasingly capable technology. One of the reasons the government is funding it is specifically to spur those technological gains.

The concept of paying a charge for each e-mail message sent currently popular with commercial services is an inherited relic from the way voice mail is sold to us by the telephone companies. And basically, they have sold us a scam.

Right now, the largest single component of what we pay the telephone companies is to fund the enormous administrative overhead to time our telephone calls and send us a bill for them. Local unlimited dial service at a few dollars a month

worked well and was profitable. But local telephone companies are striving for measured service so they can capture the same income gains as long distance carriers. There is no economic or technical reason why it should cost anymore to dial across country than it does to dial across the street. If they wiped out all the timing, measurement, tracking, and billing functions, telephone service would cost $20 a month to dial anywhere, anytime, for as long as you like. The way our regulatory structures are set up, the telephone company is allowed a profit as a percentage of the gross amount. So there is a powerful disincentive for them to point this out.

The theoretical problem with this concept is equity - some of us use the telephone a lot more than others and we tend to use it at certain times more than others. So we are probably paying an enormous premium for them to micro-meter our telephone usage. It appears to make sense - actually it probably doesn't.

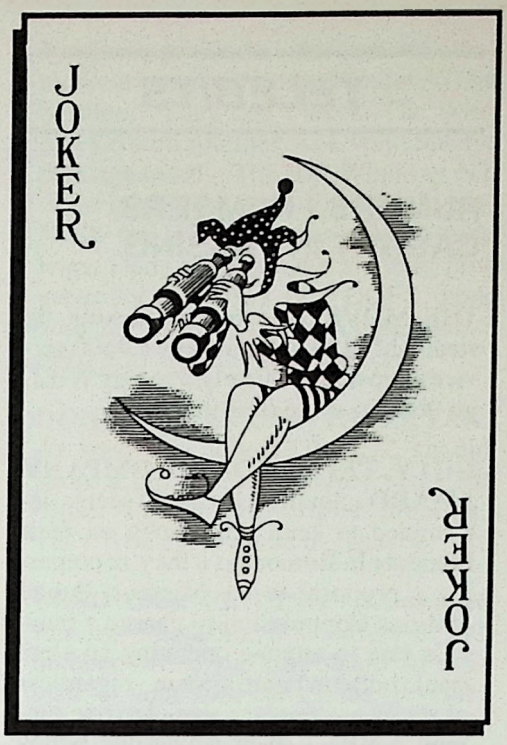
Internet demonstrates that flat access charges work for data and that broadly speaking, the only equity metering that makes sense is on gross flow - a 9.6kbps feed is cheaper than a 19.2kbps feed, than a 56kbps, 1.44 Mbps, etc. Larger entities that consume more traffic naturally need and want bigger pipes and pay accordingly. Smaller entities can survive on smaller pipes and have corresopondingly smaller flow. And as noted, the pipes themselves are expanding in size and declining in cost.

Internet is an oddity in that it did come into existence without ever building the micro-metering infrastructure the telephone companies have insisted is necessary for voice telephone service. Because it did, a much more cost efficient data system was created that to most end users - appears to be free. Any alteration of the Internet economic model to include per message charges would be difficult to implement, would generate more costs than income, and just doesn't make sense at this point. We will always pay for access to Internet rather than for our usage of Internet. And I think the future will demonstrate declining access charges rather than increasing ones.

As to IBM, they have already virtually conceded the technology. After spending millions on OSI as the internetworking model, they themselves are going to TCP/IP (the Internet protocols) virtually across their entire platform. The Internetworking protocol battle is already completely over, in case no one noticed, and IBM lost. There are a few bodies to drag from the field of action yet, but they are indeed dead. From Microsoft LAN Manager and Novell Netware - right up to IBM's largest mainframes and back down the other side to Macintosh publishing systems, TCP/IP, the Internet protocol, is how everything is hooking up.

As to the NSFNet or NREN backbone, I'm sure it will wind up being funded by the Government and several vendors will get large portions of the contractual pie and several vendors will get small portions of the pie and it will all be pretty stable, absolutely critical that it exist, and of no further impact whatever on everything that happens beneath it. There were enough participants in the development to date, that I'm confident that out of the battle a kind of balanced consensus between the educational, commercial, and government identities will emerge as to operation of the national backbone.

But broadly, the action is in the connection points beneath the backbone. I think it will be a kind of fortuitous chaos there for some time to come. Local telephone companies will sell access to it. Cable TV may sell access to it. Today's Regional or "Mid-Level" networks will sell access to it. A LOT of commercial firms will spring up, after the fashion of Performance Systems International, to sell access to it. Some will charge exorbitant rates for it and others will give it away for free. A bewildering variety of tailored, packaged services will come out of it. CompuServe will sell it. Bulletin Boards will sell it. Before it's all over, the Knights of Columbus, the Girl Scouts of America, and Boys Town will all be selling it and you might wind up with some of it free with each tank of gasoline you buy. The nature of the beast is such that once you have it, you can sell it too, and after you've sold it, you still have about as much of it as you started with. Except for the macro flow levels, it is intangible and the more of it that gets sold, the more valuable it becomes.



And in the end, you will be able to purchase whatever access level you want at a bewildering array of prices. Simple e-mail from your telephone set at the bottom and roaring multi-gigabit real time super computer links at the top - with everything in between. As long as some dufus bureaucrat doesn't step in and decree that only certain entities can sell it, or that you HAVE to purchase it from such and such an entity because you exist between two geographic meridians, it will probably be one of the most fascinating economic and technological developments of this century. And the most striking thing is that eventually, it will disappear from sight completely. You won't care any more about the politics of gigabit backbones than you do now over the politics of telephone central office switch software. To the end user, it will be desktop-to-desktop data connectivity on a global basis. And none too soon to my way of thinking.

IBM undoubtedly WILL try to dominate future computer networking. But they will be one of many players - as they are now in mainframe, mini, and personal computers. If history holds true, they won't be the cheapest place to get it, but they will help accelerate the standardization process - not an entirely bad thing actually.

Jack Rickard
Editor

TELEBITS

RUMORS - NUMBERS CAUGHT IN PASSING

THE MOVE TO 9600 is picking up steam. MCI Mail to introduce 9600 service almost immediately. Prodigy WILL go 9600 in six to nine months.

UGLY TELEPHONE COMPANY AWARD - Southwestern Bell seems determined to keep this trophy on their home shelf. Rumor has it they're preparing a proposal to the Missouri Public Utilities Commission to charge a business rate to anyone operating an electronic bulletin board system - regardless of status, purpose, or size. Anyone running a BBS - even single-line hobby boards with no charges at all would fall under the new classification. Kansas City BBS operators are forming up to fight.

A MICROSOFT BBS PACKAGE? Never happen? Remember where you read it first. Gates' Belleview Bandaleros seem intent on making one happen. While a successful BBS software package from Microsoft is just not very likely, a Microsoft enter would bring a lot of attention and legitimacy to the existing BBS vendors in the long run. Uncle Bill seems serious as a heart attack over this "Information at Your Fingertips" concept and it would appear he wants a BBS package as part of it. Vince Perriello, one of the authors of the BinkleyTerm FidoNet mail package recently signed on with the boys in Redmond and seems determined not to comment on why.

A $49 2400bps modem? Check out Software Etc. in the next month or so. Best Data Products thinks they can do it and Stan Hirshman, of Software Etc., is a closet BBS enthusiast. The unit will likely come with a software program to do MNP error correction. Despite the pricey mall floor space this 226 store chain rooms in, they've been very aggressive on prices and scour for interesting new products where they can find them. Mustang Software seems pleased to be moving their new Wildcat! 3.0 product on the retail shelf there - the only BBS software package in retail distribution - and Software Etc. is basically where you get it. If super stores is where the trend is, nobody told Stan. He was all smiles at the Software Etc. store managers convention here in Denver in late September. So were over 100 product vendors who displayed at the event. If you can wangle an invite, this is a class gathering.

PROCOMM IN A BOOK. Phil Becker, author of The Bread Board System BBS software package certainly has the background to do it right. After writing comm software for the Viking Mars Lander in the seventies, he introduced TBBS as a BBS software package back in 1981. Now, he's authored a book on PC communications for Que Books titled ***Introduction to PC Communications*** that should be released in October/November at **$24.95**. The kicker? It will include a stripped down version of **Procomm Plus** - arguably the most successful communications program on the market. The bad news? **ProcommLite** apparently will NOT include the **ZMODEM** protocol. Still would like to see that TBBS 2.2 version released Real Soon Now. This one has been "coming" for longer than most releases last.

GAME FREAKS. Apogee did REAL well with a shareware game titled Commander Keene. They've got a new titled DUKE NUKEM that is visually the most impressive thing on a screen. Get it.

HOMEWORKERS - Link Resources now reports **31%** of all adult workers in the USA do at least part of their work at home - up from **22%** in 1989. Also, according to a recent Gallup poll, **25%** of U.S. homes already have a computer and another **23%** intend to get one.

IBM 3RD QUARTER EARNINGS dropped **85%** to **$172 million** in three months ended September 30 - compared to **$1.1 billion** for the same quarter a year ago. Revenue fell **5.5%** to **$14.4 billion** for the period.

HP PALMTOP. Hewlett Packard's 95A palmtop is a HIT. At **$699** (as low as **$469** on the street), this little XT in a billfold doesn't look like it's good for anything, but the gadget freaks are losing all rational perspective over this toy. No touch-typing, but they're selling

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Editor/Publisher

Jack Rickard

Contributing Writers

John Gilmore
J. Scott Christianson
Dan Wendling
David Hakala
Nick Anis Jr.

Advertising Sales/Marketing

David Hakala

Subscriptions/Circulation

Fortunata Rickard

Online Circulation/Testing

Gary Funk

Editorial Offices

5970 South Vivian Street
Littleton, CO 80127
(303)973-6038 voice
(303)973-3731 fax
(303)973-4222 BBS
***800-933-6038** Subscriptions*

E-Mail

Internet: **jrickard@boardwatch.com**
FidoNet: **1:104/555**
MCI Mail: **418-7112**
CompuServe: **71177,2310**

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hem in truckloads. It DOES have a cable to connect to a pocket modem but not just any modem will work. Early reports that US Robotics Worldport would make the trip with the HP 95A haven't panned out. Some reports that an **$80** model 2400bps modem from GVC will. The problem? You get four wires of an RS-232 port basically. Should work. But there are problems.

Newsbytes, left in the lurch with the demise of THE SOURCE stumbled to CompuServe, fell out with them and went to GEnie, now available on ZiffNet as well. Seems to be doing well as an electronic only news publication.

PCBoard seems to be riding high on their selection as Editor's Choice in PC Magazine's September 10 review of BBS software packages. Lots of grief on ZiffNet over the article though. With a few hundred glaring errors in the piece, a lot of unhappy system operators.

Internet access for PCBoard callers is heating up. **Canada Remote Systems** in Toronto, **Channel 1** in Cambridge, and **Executive Network** in New York are all offering Internet access to callers. With off line mail readers also hot, we could see a very easy to access Internet e-mail take over the world - by BBS. It won't be six months till its a done deal. E-mail to anywhere - from any sizable BBS.

Odyssey in Los Angeles - 64 line Galacticomm BBS is suffering growing pains as the largest chat BBS in the world. Michael Allen wants to make his mark with a $20 unlimited flat-rate monthly plan with local access through the CompuServe network. You pay $20, call a local CompuServe access number, logon to Odyssey, and chat for a month. Sounds interesting. But the other rumor has to do with a Delphi buy out of Odyssey, AND a Delphi menu selection that hooks you up to Bob Mahoney's EXEC-PC in Wisconsin. Apparently Delphi is mounting a big push to gain subscribers - with an eye toward a public stock offering in the foreseeable future.

Connect USA and CompuServe are in a legal battle royale. CompuServe was rumored to be looking for someone to take over the $3 hourly 9600 bps local access plan after having collection problems. Connect USA tried to turn the tables by filing suit against CompuServe - claiming they didn't get 9600 ports up fast enough. Sysops who signed up for the program are REALLY lost. Most of the BBSs operating on the system were brought on GRATIS by Connect USA. The ones who paid $2300 per month or more to be on the service were irked to receive 3 to 4 callers per day. Once word was out that EXEC PC, Channel 1, Chicago Syslink and more paid NOTHING (ok $13 then) to get on the service was out - the rest are screaming bloody murder. It's shaping up as the sysop scam of the year. Worse, the same group that brought you Connect USA also did the Starlink service - basically a resale of Tymnet outdial. It ceased operation as of October 10 as well.

PROBLEMS IN ASP

The Association of Shareware Professionals is becoming the voice of the shareware software author. But many of the founding members are bailing out over ASP's militant controls and restrictions on how shareware can be marketed and what's crippled and what's not. Latest defector - JIM BUTTON of PC-FILE. One of the oldest shareware products still on the market, PC-FILE 6.0 will be strictly commercial software. Button resigned from ASP last month.

PROBLEMS IN CELLULAR. According to a study from the Eastern Management Group, the cellular market has a problem - turnover. Cancellation rates in most markets are running as high as **35-50%**.

REAL NUMBERS GROW ON TREES. From U.S. News and World Report. Estimated number of trees in the United States - **146.8 billion**. Number of trees consumed annually - **250 million**. Number of seedlings planted in 1980 - **1.45 billion**. In 1990- **1.90 billion**.

CHEAP MODEM - 1200 bps modems are a little past their time. But if the cost of a modem is what's kept you off line, call Damark at **800-729-900** and ask for their external Hayes compatible 1200 bps item **B-378-181504** - priced at **$19.99** plus **$5.50** shipping and handling.

WINDOWS - WE DON'T DO COMMUNICATIONS

Persistent problems with ports of communications programs to Windows. The problem? They don't work. The Windows comm routines suck wind but not data apparently. The fix? Windows NT - due in about a year if it doesn't rain. Xtalk for Windows was riddled with bugs. Does anyone have a comm program for Windows that DOES work with high speed modem connections? Send it in. We'd love to find one.

DON'T BUY A PLAIN PAPER FAX. At least not now. COMDEX should show a bevy of plain paper faxes for under **$1000** with copier function. They'll be everywhere in January.

USED CAR PRICING - Consumer Reports Magazine now offers a 900 number where you can obtain an estimate of your used car's trade-in value. **1-900-446-0500** at **$1.50** per minute.

PRODUCTS WE'D LIKE TO SEE

A communications compiler - takes Telix or Procomm scripts and compiles them to stand alone EXE programs.

A Mail Sweep Program - pull the trigger and watch it get your e-mail from CompuServe, MCI Mail, GEnie, Internet, Prodigy in a single automated sweep.

Still waiting for a hand held cellular telephone with an RJ-11 jack allowing laptop connections without a clunky external interface box.

QUOTABLES

"More than any time in history mankind faces a crossroads. One path leads to despair and utter hopelessness, the other to total extinction. Let us pray that we have the wisdom to choose correctly." - Woody Allen.

"If you're not playing a big enough game, you'll screw up the game you're playing just to give yourself something to do." - John-Roger & Peter McWilliams in DO IT!

DATA ACCESS FROM A PAY PHONE

One recurring complaint about airport telephones is they typically have no RJ-11 jack for plugging in laptops. Many travelers stuck in airport terminals for hours would love to fill some of the time handling their e-mail.

AT&T has announced a new model of public pay phone termed the **AT&T Public Phone 2000**. Designed by AT&T Bell Laboratories, the pay phone allows travelers to plug in their laptop computers or portable fax machines.

Better yet, you don't even need the laptop. The Public Phone 2000 features a built-in keyboard for travelers to access their electronic mail or any dial-up home or office database. The keyboard rental fee is **$2.50** for the first ten minutes and **$1** for each additional ten minutes. A nine-inch color monitor displays high-resolution graphics and text. Foreign language screens provide dialing instructions in French, Spanish and German.

All the traditional voice services currently available on public phones are accessible on the new phone, including calling card and operator assisted calls, such as collect and bill to third party. In addition, travelers can insert any of the AT&T Calling Cards, including the AT&T Universal Card, as well as most commercial credit cards, rather than manually key in their card numbers.

These phones are designed to replace existing AT&T Card Caller Public Phones in airports, hotels and convention centers. Initially tested in Newark Airport in New Jersey and John F. Kennedy Airport in New York, the Public Phone 2000 is scheduled to be installed in **85** of the top **100** airports and nine of the top 10 hotel chains by the end of 1992. Dallas/Fort Worth International Airport, Orlando International Airport and San Francisco International Airport should have theirs by the end of the year.

IRIDIUM SATELLITE PROJECT UPDATE

At one time, telephones were a sign of prosperity. Some people had them and others didn't. The concept of universal service within the U.S. has been most productive for all aspects of our economy. Today, virtually every person and every business in the country is reachable by telephone if you know the right ten digits.

Globally, this is not yet true. Many areas of the world are simply unreachable by telephone and if left to the development of a copper network of wires, will remain unreachable for decades. Motorola's Satellite Communications Division proposed last year a global network of communications satellites titled **IRIDIUM** to provide wireless telephone service to any spot on the globe at any time. We mentioned IRIDIUM a year ago but it's worth a revisit.

The basic plan for IRIDIUM is patterned after cellular telephone. But rather than callers moving from cell to cell across land, a network of low-earth orbiting communications satellites would pass overhead, handing callers off to the next satellite in the network as they pass beyond the horizon. The network will consist of **77** satellites arranged in seven phased-polar orbital planes running north/south with **11** satellites in each plane orbiting at an altitude of **413** nautical miles. Satellites are offset in phase with satellites in the adjacent plane - forming a matrix that provides global coverage. After determining this would be the minimum number of satellites required to effectively cover the earth Sherwin-Williams style, Motorola named the project after the element IRIDIUM - which similarly has **77** electrons circling its nucleus.

The orbital planes will be separated by about **27** degrees. The resulting **372** nautical mile "footprint" of each satellite will be able to service **110** simultaneous callers - **8470** callers globally. Motorola seems to think this is sufficient to service a caller base of some **1.8 million** by the year 2001.

Pricing is not fixed yet, but projections are for a **$3000** hand-held telephone, a **$50** per month subscriber fee, and **$3** per minute in air time. This would likely be attractive for those on boats, airplanes, and at remote sites and is relatively inexpensive compared to current solutions. Beyond simple voice connections, the service will also provide global paging, 2400 bps data connections, a global positioning service allowing callers to calculate their exact longitude, latitude, and elevation to within a few feet, and facsimile service. Ground stations would provide the link to existing telephone networks.

Motorola is proposing an open architecture with ownership of the Iridium satellite constellation by an international consortium of national telecommunications agencies and large communications companies. The cost of the initial project is estimated at **$2.5 billion**. The first seven satellites are scheduled for a 1994 launch with the full constellation up and orbiting by 1996 and introduction of the service in 1997.

US West applied to the FCC this past month for permission to experiment with **PCS - Personal Communications Service**. PCS is the cellular darling for local cellular service of the future and US West is the last of the RBOC to begin working with this option. It uses spread-spectrum digital technology to service a much larger number of subscribers in a much smaller area using smaller, cheaper handsets. With all local US telephone companies now working on development of low-cost wireless telephone service, Motorola working on the IRIDIUM project for global telephone service, and television increasingly going to cable delivery, it would appear that the "Negroponte Flip" is pretty much on schedule. Nicholas Negroponte, head of MIT's Media Lab, is widely regarded as the first to comment on the probability that over the next 20 years most of what is now transmitted by airwave would eventually move to cable and fiber delivery while most of what now travels by cable (telephone service) would move to wireless technologies for delivery. Though something of a generalization, this swap of media does seem to be happening, and many are referring to it now as the Negroponte Flip.

In any event, we look forward to the time when we can regale our grandchildren with tales of the "old days" when you COULDN'T dial anyone anywhere on the planet instantly.

INTEL 14.4EX MODEM ANNOUNCED

As of October 7th, Intel Corp. announced introduction of a **14,400 bps CCITT V.32bis** modem with a list price of **$699**. The **Intel 14.4EX** continues the trend toward free-fall pricing of high speed modems. The new model comes bundled with DCA's **CrossTalk Communicator** communications package, and if purchased before December 15, 1991, a copy of Central Point Software's **PC TOOLS** Version 7.1 as well. Shipments of the 14.4EX model are expected by November 18.

The new modem features **CCITT V.32bis** modulation at speeds up to **14,400 bps**. Both **V.42bis** and **MNP1-5** error correction/compression allow data throughput up to a theoretical maximum of **57.6kbps**.

Owners of Intel's earlier 9600 bps V.32 model, the **9600 EX**, can upgrade between October 31, 1991 and January 31, 1992 for **$200**. The price of the **9600EX** has been reduced from **$799** to **$599**.

Intel also offers a BBS operator discount program. Qualifying BBS operators can purchase the **9600EX** for **$299** and the **14.4EX** for **$399** with a limit of four modems. Details on the Intel product support BBS at **(503)645-6275**. Intel Corporation, PC Enhancements, 5200 N.E. Elam Young Parkway, Hillsboro, OR 97124 **(800)538-3373**.

POQET COMMUNICATING COMPUTER

Poqet Computer Corp. is introducing a tiny palm-top PC compatible computer that performs data communications duties by radio. The computer is quite small at **2.2** pounds with a physical dimension of **8.8** by **5.9** inches and some **2** inches thick - slightly larger than a videocassette. It sports a **7 MHz 80C88** microprocessor and purports to run up to 100 hours on two **AA** alkaline batteries.

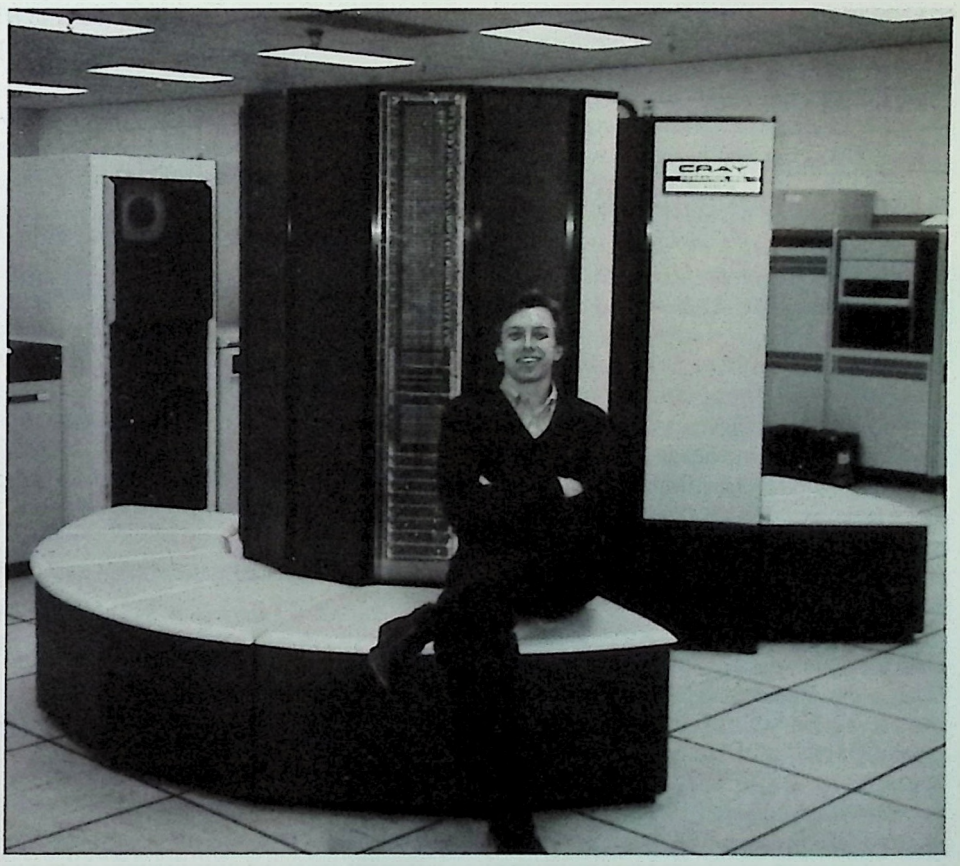
The new model also sports a built-in 9600 bps **CCITT V.32/V.42bis** fax modem as well as standard serial and parallel ports. Motorla's **RPM 400i** model radio modem provides wireless wide-area data communications and electronic mail over the **ARDIS** network. **ARDIS** currently serves virtually any location in the largest **400** metropolitan areas in the United States. The device will connect at up to **4800 bps** via **ARDIS** and **9600 bps** via standard telephone lines. The company plans to ship the unit in quantity during the first quarter of 1992 at a list price of **$4995**. The Poqet is diskless and uses 4MB RAM cards for data storage. Poqet Computer Corp., 5200 Patrick Henry Dr., Santa Clara, CA 95054; **(408)982-9500**.

EXEC-PC RECEIVES 4 MILLIONTH CALLER

EXEC-PC, probably the nations largest electronic bulletin board with **250** telephone lines, received it's **4 millionth** call on September 26, 1991 at 8:56 PM. **Tony Linaskog** called from Sandviken Sweden and received a 14,400 bps V.32bis modem for his trouble. Tony had been calling at 300 bps quite regularly to participate in the EXEC-PC chat service, which currently makes up **64** of the **250** telephone lines. The new modem, a prize for the 4 millionth caller, should up his data rate a bit or two.

Bill Travis of Wichita Kansas didn't win the modem. He dialed in at 8:56 PM as well but wound up as caller 3,999,999 while Tony Honchar of Freeport Illinois called in at about the same time to become caller 4,000,001. Unfortunately, close counts better in horse shoes and hand grenades than in BBS contests.

EXEC-PC, is run by Bob and Tracy Mahoney in Elm Grove Wisconsin and typically receives **4500** calls each day with subscribers paying **$60** per year to access the service. The BBS has long been noted as one of the most comprehensive shareware libraries in the world and rumor has it that Delphi is wooing Mahoney in an effort to get EXEC-PC on the Delphi system as a menu option. Callers download about **700,000** files per month from the system.



Bob Mahoney of EXEC-PC --Shopping for new Hardware?

EXEC-PC was started in the upstairs bedroom of Mahoney's apartment on **November 28th, 1983** on an IBM PC with a single modem. Thanksgiving was continuously interrupted by Mahoney's trips upstairs to "see who was on" each time the telephone rang. By March 15, 1985 the system was up to six access lines with a 280 MB hard disk and Mahoney began charging **$35** per year to access the service.

Today EXEC-PC currently has over 10 Gigabytes of storage on line with 250 telephone access lines. On September 26th, the system received **8286** calls from modem winner hopefuls. Mahoney predicts caller 5 million in summer 1992. EXEC-PC, P.O. Box 57, Elm Grove, WI 53122; **(414)789-4200** voice; **(414)789-4210** modem.

FOUR PORT SERIAL CARD FOR WINDOWS

Star Gate Technologies, Inc., has announced the **Plus 8** four-port serial card that works with Microsoft Windows 3.0. The product actually consists of a PC expansion card, cable, and breakout box. Star Gate is quite proud of this system at **$570**. Star Gate Technologies, Inc., 29300 Aurora Road, Solon, OH 44139; **(216)349-1860.**

PRIVACY PROJECT RADIO SHOW SERIES

The Privacy Project: Personal Privacy in the Information Age, will air nationally on public radio stations for thirteen weeks, beginning in early October. The half-hour weekly programs address important issues regarding new telecommunications technologies such as Caller ID, cellular phones, 800 numbers, and electronic messaging. The series is distributed via National Public Radio Satellite by Western Public Radio of San Francisco.

Executive Producer Gregg McVicar of Pacific Multimedia spent over a year producing the series which includes the perspectives of Mitchell Kapor and John Perry Barlow of the Electronic Frontier Foundation, Marc Rotenberg of Computer Professionals for Social Responsibility, Janlori Goldman of the ACLU, Laurence Tribe of Harvard Law School, Gary T. Marx of MIT, as well as Richard Cheshire and John Gilmore.

The show series was funded by the Telecommunications Education Trust, established by the California PUC from financial penalties levied against Pacific Bell for fraudulent telemarketing practices. The series will be heard on National Public Radio stations - local air times vary. Contact Gregg McVicar; **(510)938-2877**; **GMcVicar@mcimail.com**

U.S. ROBOTICS FINANCIALS

U.S. Robotics has released a good bit of financial data as part of its public offering of **3.6 million** shares of common stock. The numbers are interesting in that U.S. Robotics has virtually no products outside the online industry. The INCREASE in gross revenue this company had between 1990 and estimated 1991 figures is just slightly larger than their TOTAL revenues for 1987. Industry analysts estimate USR owns about **8%** of the market for 9600 bps V.32 modems and about **27%** of the market for the newer 14,400 bps V.32bis modems.

U.S. ROBOTICS FINANCIAL INFORMATION

YEAR	REVENUE	INCOME
1986	$19,805,000	$1,253,000
1987	$21,072,000	$790,000
1988	$28,793,000	$1,039,000
1989	$37,533,000	$1,936,000
1990	$56,359,000	$4,727,000
1991	$78,000,000	$7,000,000
1992	$105,000,000	$10,000,000

LARSON'S FAR SIDE CALENDAR SOFTWARE

Gary Larson has gained fame and fortune by drawing bizarre cartoon panels - mostly of cows and the odd alligator pondering various metaphysical and philosophical questions. The panels are carried in thousands of newspapers nationwide. His cartoons have also been collected into numerous books and day calendars. Amaze Inc. brings Larson's particular brand of wry madness to the computer screen with **The Far Side Computer Calendar** - a **$69.95** scheduling/calendar program for Microsoft Windows 3.0.

The program includes 366 Larson cartoons and even displays animated sequences of Larson characters. The scheduler features are pretty basic, but the program is nonetheless entertaining. Could catch on as Christmas approaches. Amaze Inc., 11810 115th Ave. NE, Kirkland, WA 98034; **(206)820-7007.**

PCREF - TINY POCKET BOOK

Tom Glover is a modest publishing success story. He put together a tiny pocket book under the dullest of auspices - tables of weights, measures, rules of thumb, and calculations and printed roughly 400 pages of them in a tiny 5 1/4 by 3 1/4 format that you really CAN put in a shirt pocket. He printed some up and sold them at **$7.95**. About 100,000 copies of **POCKET REF** later, he doesn't find it dull at all. Everyone who sees one of these little monsters wants one. A couple seconds flipping through this treasure trove invariably results in a table of SOMETHING you've always wanted to have handy.

With seven employees and still operating out of the basement of his home, he and his partner Dave Dirby have launched their own mini-publishing business. Their second title, **POCKET PCREF** is particularly engaging, with lists of hard drive installation parameters on over 2000 drive models, Hex/Decimal/EBCDIC conversion charts, keyboard scan codes, parallel printer interface pinouts, serial I/O interfaces, the Hayes modem AT command set, PC memory map, hardware interrupt lists, software interrupts, error codes, DMA channels, printer control codes for HP Laserjet, Epson, and Diablo printers, a historical chart of all DOS releases since version 1.0, DOS com-

mands, ANSI.SYS escape codes, and more, this little pocket pal is quite handy. Additionally, a little telephone book in the back lists over 2000 computer industry players and their telephone numbers. The book is **$14.95**. Sequoia Publishing, Inc., 12533 W. Grand Dr., Morrison, CO 80465; **(800)873-7126** voice.

DOORWAY 2.20 - REMOTE ACCESS PROGRAM

TriMark Engineering has released version **2.20** of its popular remote access program **DOORWAY** as of October 1, 1991. The new version features its own host program, file transfer modules, and access program.

DOORWAY gained fame in the BBS world as a low cost shareware program that allowed BBS operators to use the "doors" feature of many BBS software packages to run programs that did not ordinarily work through the communications port. Even programs that write directly to the screen, rather than through normal BIOS calls, could be redirected through the RS-232 communications port. **DOORWAY** was also quite commonly used as a remote access program allowing users to call home or the office and drop to DOS to run their computers remotely. It offered all the features of more expensive remote packages such as Carbon Copy or PC Anywhere, at a fraction of the price.

The new **2.20** version is NOT shareware - it is the first commercial release of **DOORWAY** at a list price of **$49.95**. It includes a host program titled **DWHOST** that answers the telephone and passes control to **DOORWAY**. A **DWXFR** program allows file transfers, although most users use Chuck Forsberg's **DSZ** program for the same purpose. Likewise a **DWCOMM** program is provided for callers to dial their home system. However, most communications programs such as QModem, Telix, and Procomm feature a **DOORWAY** mode that passes all keystrokes to the program. Finally, a **XTABLE** program can be used for keyboard translation/redefinition. If a particular application program requires an **F10** key to exit, for example, you may translate another character (i.e. **$**) to cause **F10** to be passed to the program. TriMark Engineering, 406 Monitor Lane, Knoxville, TN 37922; **(615)966-3667** voice; **(615)675-3282** BBS.

SYSOP MODEM DISCOUNT PROGRAMS V.32 AND V.32bis MODEMS

Vendor	Support BBS	Sysop Price	List
ATI V.32	**(416)756-4591**	$350	$699
Cardinal 9600V42 V.32	**none**	$269	$699
CompuCom V.32bis	**(408)738-4990**	$329	$539
CompuCom V.32	**(408)738-4990**	$229	$339
GVC SM-96 V.32	**(201)579-2380**	$379	$695
Hayes Ultra 144 V.32bis	**(800)874-2937**	$599	$1199
Hayes Ultra 96 V.32	**(800)874-2937**	$499	$999
Intel 14.4EX V.32bis	**(503)645-6275**	$399	$699
Intel 9600EX V.32	**(503)645-6275**	$299	$599
Multi-Tech MT932EAB V.32	**(612)785-9875**	$449.50	$899
Practical Peripherals PM9600SA	**(818)706-2467**	$339	$699
Twincom 9600 V.32	**none**	$279	$299
U.S. Robotics DS V.32bis	**(708)982-5092**	$499	$1295
Ven-Tel V.32	**(408)922-0988**	$499	$899
ZyXEL U-1496E V.32bis	**none**	$370	$695

MOTOROLA 7.7 OUNCE CELLULAR PHONE

Motorola has announced a new entry in the light-weight cellular telephone class with their **Microtac Lite** model. The unit weighs **7.7 ounces** and folds into a 5-inch billfold size package occupying less than 12 cubic inches. The unit features a 45-minute talk time and comes with a package of accessories including a heavier 150-minute battery, a car power adapter, charger, and carrying case at **$1200**. Motorola Inc., 1475 W. Shure Drive, Arlington Heights, IL 60004; **(708)632-2841**.

COMPUSERVE ANNOUNCES NATIONAL MHS MAIL HUB SERVICE

CompuServe has announced a new service that dramatically alters life on Novell Local Area Networks. Essentially, CompuServe will act as a global hub service for all **M**essage **H**andling **S**ystem (**MHS**) mail systems. The service was formally announced October 15th.

Essentially, any local area network running Novell's MHS version 1.5 can register on CompuServe as a host and subsequently dial a local CompuServe network number by modem to send and receive mail in bulk. Mail can be sent from any MHS system to CompuServe subscribers or to any other registered MHS host. Similarly, anyone on CompuServe will be able to address mail to any e-mail user on any registered MHS host. CompuServe callers will simply address mail to:

MHS:USER@HOST

while MHS users can send mail to CompuServe callers at:

MAIL @ CSERVE {71177,2310}.

There does not appear to be any specific charge to register your LAN. Simply setup a normal CompuServe ID for the LAN and fill out the online registration. You must select a unique workgroup name and it wasn't clear how name conflicts will be handled. There is a **$5** hourly surcharge on the mail sessions beyond CompuServe's normal connect charges - typically **$12.50** hourly non-prime time for a **$17.50** per hour total connect charge. Additionally, you will need to download the **MHS 1.5C** patch from CompuServe. This **600K** update provides your MHS program with CompuServe's **B+** protocol necessary to exchange mail. The patch download costs **$30**.

CompuServe will also maintain a directory of MHS users - although participation is voluntary.

This announcement has some peculiar potential for electronic bulletin boards. Assuming BBS software vendors adopt MHS gateways, it is possible for bulletin boards, as well as LANs, to use CompuServe to pass mail between the BBS and CompuServe - as well as all other BBS or LANs registered. If a significant number of LANs quickly do this, and we expect they will, CompuServe's hub service could have a dramatic impact on e-mail connectivity.

There are an estimated **3.5 million** MHS mailboxes operating on private LANs across the country now. Most are limited to the local network. CompuServe's new service has the potential for linking a significant number of these systems for mail.

For more information, enter **GO MHS** at any CIS prompt. CompuServe Information Service, 5000 Arlington Center Blvd., Columbus, OH 43220; **(614)457-8650**.

TRADE SHOW PARTY LISTS

by Nick Anis Jr.

No one sells anything in a trade show booth, not even at COMDEX. The real deals are cut far away from the "Lookie Lous" and the competition, at parties thrown by vendors, user groups and industry luminaries. If you know which parties to attend and where they are being held, you can become part of an in-crowd that really makes money at trade shows.

Karen Thomas, graduate of Julliard's opera curriculum, is the unspoken and unchallenged Keeper of the Party List for shows like COMDEX, Macworld, Networld, Seybold, and any other event important enough to draw serious party activity. IBM, Ingram and Control Data Corp. are just a few of the companies that consult Thomas before scheduling their own parties around the competition's, or to learn where to send their VPs for profitable elbow-rubbing and bending.

"I have begun a new niche in public relations called 'Party PR,' or the technique of doing the majority of your PR work at parties and social events," says Thomas. "My style is to combine business with socialite glamour. The result is great PR for my clients and tons of articles."

Thomas' first trade show was Spring COMDEX in 1984. She originally told people which parties to attend by word of mouth. The first printed "Official KarenNet COMDEX Party List" was published in 1986. The lists are distributed to Thomas' "P" (for party) list by MCI Mail, CompuServe, and fax, starting about 1-2 weeks before each show. Needless to say, there are many updates in these final frenetic days. The final version is distributed by Thomas herself at each show.

Getting on the Party List is fairly easy; getting a legitimate copy of the final list takes clout, quid pro quos or flagrant flattery. The press, Thomas' clients and industry luminaries are on her standard distribution list. If you're not one of the above, you can trade information about parties with Thomas. Give her a juicy item for her list and she'll give you the latest version. Sometimes sweet-talk works too, I've heard. Don't practice that myself (ahem).

Thomas will tell you, if you ask nicely, which parties to attend to meet specific people or types (press, resellers, user groups, etc.) and which of tonight's parties is the one "everyone" will attend. She'll tell everyone to avoid any party with "Hospitality Suite" in its name. These scenes are usually sales pitches made by rookie sales reps sent by vendors. No one else wants to go.

No matter what version of the printed list you receive, see Thomas at the show for her last-minute handwritten "official" list. Many hard-pressed luminaries change their location, or even stake out "decoy parties" to escape innumerable gate-crashers and bores. Vadim Yasinovsky of Clear Software says the only way to know if you're at the real Dvorak party is if you see Karen Thomas there.

Clearly Karen has found her calling and a neat way to get the most out of a trade show. Jake Richter, President, Panacea Inc., and PC Graphics Analyst, located in Londonderry, New Hampshire calls Karen a "PR Goddess" and says her Underground Party Lists are a must at all major trade shows. "How else would I know where all the best parties and events are?" says Richter.

Thomas Public Relations, 606 Fifth Ave., Box 598, E. Northport, NY 11731; **(516)266-2212**; MCI Mail:karen thomas or 310-3946; CompuServe:73740,2661

MUSTANG SOFTWARE BUYS QMODEM

Most advances in online software have had to struggle with a chicken and egg situation at almost every step. If the BBS vendors introduce a "new" but not so standard feature, very likely no one will have the appropriate terminal communications software to dial it. Likewise, communications program vendors have little impetus to incorporate new terminal emulations or protocols unless they believe there will be a significant number of online services offering it. For this reason, it can be difficult for new advances such as bi-directional protocols and advanced graphics to "catch on" in the online world.

Most of the truly interesting innovation online today involve online services that issue their own proprietary terminal program required to access the service and view all the graphics. America Online, Prodigy, USA Today Sports Network, etc. all have their own peculiar terminal programs you must use to access their systems and see all the "jazz" available. Coconut Computing's Coconet software lets you operate a very colorfully graphic and easy to use BBS - but you're callers must also use the proprietary Coconet terminal program to see all those features.

For callers, the result is a hard drive cluttered with half a dozen specific terminal programs useless for any purpose other than dialing the specific online service for which they were designed.

In a surprise October 21 announcement, Mustang Software, Inc. (MSI) unveiled a pretty cunning strategy for dealing with this problem. They bought the Forbin Project's QMODEM terminal program - a shareware program currently in version 4.3 - outright. To some degree, this gives MSI control of both ends of the link with their popular WILDCAT! software on the BBS end and QModem on the terminal end. The potential in this combination is persuasive.

QMODEM is probably the third most actively used terminal software program in the world - behind Data Storm's PROCOMM and possibly Colin Sampalaneu's TELIX. QMODEM boasts some 30,000 registered users indicating a probable real user base of a half-million callers or more. As such, Mustang won't be trying to reinvent the wheel and persuade the world to use it each time they introduce a new communications feature. Rather, they can take a large installed base and upgrade it to the advantage of everyone.

QMODEM author John Friel has also joined Mustang's in-house engineering staff as Vice President of the new QModem Software R&D Division and will continue to work from his home in Cedar Falls Iowa. His first order of business is to integrate QModem with Mustang's other recent acquisition, Greg Hewgill's Silly Little Mail Reader (SLMR). SLMR provides off line mail reading capabilities for any BBS offering the **.QWK** mail packets that have become the norm.

Despite the financial success of QModem in the shareware market, Friel asserts that he's much more comfortable developing software than marketing it. The alliance with MSI will allow him to focus on development without the often distracting work of dealing with sales and promotion.
QMODEM Version 5.0 is scheduled for a January 6, 1992 release to incorporate SLMR, smart menus, and a mouse-driven interface. The product will be released commercially at **$99** while the existing Version 4.3 will continue to be available as a free demonstration version. MSI has eschewed the shareware concept as defined by ASP in favor of selling their latest release commercially while making the earlier release available for download as a demonstration program.

John Friel (left) of QModem and Jim Harrer of Mustang Software, Inc.

By marketing a powerful contender in the BBS market with Wildcat 3.0, and another powerful terminal program in QModem 5.0, MSI will own the basis for introducing such exotica as NAPLPS graphics such as those used on Prodigy, very smart menus and scripts, and anything else they take a fancy to requiring coordination between the BBS program and the terminal program. Even better, those users and businesses who take this approach aren't shackled with a single purpose terminal program. QModem is probably THE most flexible program with if anything an overabundance of terminal emulations, file transfer protocols, and a very capable script language suitable to any communications task.

QMODEM was among the first terminal programs to support 16550 UARTS and tagged file upload lists and is considered a "power user's" terminal program. The program may be overkill for many uses and it tends to require a large amount of hard drive space - 1.5MB or more in recent releases - to support all the features.

Wildcat! 3.0 is the only BBS software package available on retail shelves - currently in over 250 Software Etc. stores nationwide. According to MSI president Jim Harrer, they've already reached agreement with Software Etc. to distribute **QMODEM 5.0** as well - probably at some discount from the **$99** list price of the program.

Beyond simple software acquisition, the addition of John Friel, Greg Hewgill, and Scott Brynen to MSI's development staff augurs well for future products.
Mustang Software Inc., PO Box 2264, Bakersfield, CA 93303; **(805)395-0223** voice; **(805)395-0713** fax; **(805)395-0650** BBS.

ONE BBSCON EXECUTIVE ADVISORY BOARD FINALIZED

In an effort to make the Online Networking Exposition and BBS Conference (ONE BBSCON) scheduled for next August in Denver, representative of a wide segment of the online world and BBS community, ONE, Inc. has announced formation of an Executive Advisory Board of industry leaders to provide adult supervision for Jack Rickard and Phil Becker, promoters of the show. The committee consists of:

Jim Harrer, President, Mustang Software, Inc., - Wildcat! BBS Software
Mr. Harrer authored and developed Wildcat! BBS software - one of the most popular BBS software packages on the market with an installed base of some 10,000 BBS systems. Mr. Harrer, previously the only BBS software vendor to display at COMDEX, frequently attends trade shows across the country and has hosted his own Wildcat! conference last July. He can assure Wildcat! operator's and caller's areas of interest are addressed at ONE BBSCON.

Jim Warren - Founder, West Coast Computer Faire, Dr. Dobbs Journal, InfoWeek. Mr. Warren founded and operated the West Coast Computer Faire, a successful industry trade show that reached a peak attendance of some 47,000 faithful PC enthusiasts. Mr. Warren continues today as columnist in MicroTimes and continues to publish his own Silicon Gulch Gazette newsletter. He's agreed to act as unofficial mentor/adviser to ONE BBSCON.

John C. Dvorak, PC Magazine Columnist and author of Dvorak's Guide to PC Telecommunications. Mr. Dvorak has been perhaps more effective than anyone else in bringing the attention of the wider PC community to the "fourth application" of online communications. His Dvorak's Guide to PC Telecommunications, published by Osborne McGraw/Hill, is the largest selling book ever published on the topic. As a veteran computer industry magazine columnist attending an number of industry trade shows each year, he's also developed some strong opinions on what makes a good show - and what doesn't.

Steve Laliberte, Directory, BYTE Information Exchange (BIX).Mr. Laliberte adds a valuable point of view from several perspectives, including UNIX online systems and experience with the commercial online service market. BIX has retained a grass roots technical perspective while offering the scope and power of a commercial online system. We view Mr. Laliberte as having a unique grasp of both the BBS worlds and the commercial world.

Dave Hughes, President, Old Colorado City Communications.Mr. Hughes has been a tireless advocate of the use of telecommunications in political and educational environments. He's pioneered a number of education online experiments including Montana's Big Sky Telegraph system and the MIT online course in chaos mathematics - bridging University Laboratories and High School classrooms by modem. He's also been a key participant in discussions on the future of Internet and the role of NREN.

Fred Clark, President, Clark Development Company, Inc. - PCBoard BBS Software. Mr. Clark authored and developed one of the most popular BBS software packages available in PCBoard. He can assure that the needs and interest areas of PCBoard operators and callers are addressed at ONE BBSCON.

Bob Stein, President, Galacticomm Inc., - The Major BBS. Mr. Stein serves as President of Galacticomm Inc., developer of the popular MAJOR BBS software package. Mr. Stein represents the MAJOR BBS caller and operator community.

Stan Hirshman, Vice President of Store Operations - Software Etc. In addition to his role as a key executive for one of the nations largest software store chains (250 stores nationwide), Mr. Hirshman is himself a hobby BBS operator. Additionally, Mr. Hirshman holds a conference for some 250 Software Etc. store managers in Denver each year.

The concept of an Executive Advisory Board was first proposed by Jim Harrer, Mustang Software Inc. According to ONE, Inc. President Jack Rickard, "We strongly feel this Executive Advisory Board will provide an invaluable 'brain trust' to ensure that all elements of the BBS and online community are represented and addressed at ONE BBSCON next August. We want to make sure every BBS caller or operator that attends gets the best information available in the industry - no matter what particular area of the online world they frequent. It's a thoroughly fascinating industry and deserves an equally fascinating convention. We think these gentlemen are uniquely qualified to hold our feet to the fire to make it happen." ONE, Inc., 4255 S. Buckley Road, Ste. 308, Aurora, CO 80013; **(303)699-6589** voice.

CANADA REMOTE SYSTEMS OPENS U.S. ACCESS LINES

Toronto's Canada Remote Systems, the largest BBS in North America running PCBoard BBS software, has opened eight U.S. access lines in Detroit, Michigan at **(313)963-0663**.

The service went bankrupt in August of 1990 under the ownership of Jud Newell. Neil Fleming bought the foundering service which had attracted some **8,000** paid subscribers at that time via **94** telephone lines. In the year since, Fleming has expanded the service to **148** telephone lines, some **10,000** paid subscribers, and sports **400,000** files on **23** Gigabytes of disk storage. Additionally, the service has added online news feeds including UPI International, Newsbytes, Canadian Press, Microbytes, Boardwatch Magazine, Toronto Computes, and daily stock market reports from six North American exchanges.

In addition to the added Detroit telephone lines, Canada Remote has made a couple other dramatic service moves within the last few months. They added a gateway to the global Internet for e-mail and Usenet News Groups. They now participate in eleven international mail networks. And most recently they have purchased another local Toronto BBS, a chat service titled **CITYLINK**. CITYLINK, currently operated by Ed Stines and Mark Peterson, is a TBBS-based multiline chat and game system operating at **(416)222-3150** and is one of Toronto's most popular bulletin boards.

"We are really excited about this new acquisition", states Neil Fleming, president of Canada Remote Systems. "This type of social or chat facility has often been requested by our existing members, and now we can finally provide it."

All current CRS members will be allowed access to CITYLINK and likewise, all CITYLINK subscribers will have full access to CRS.

Canada Remote Systems charges a flat-rate **$99** per year access fee. Canada Remote Systems, 1331 Crestlawn Drive, Unit D, Mississauga, Ontario L4W 2P9 Canada; USA WATS **800-465-7562**; Office voice **(416)620-1439**; fax **(416)629-0771**; BBS demo lines **(416)798-4713**.

INTERNET NEWS

ACCESS TO THE INTERNET - PERFORMANCE SYSTEMS INTERNATIONAL

One of the big issues regarding Internet is access - who gets it and why. According to **P**erformance **S**ystems **I**nternational (**PSI**), a Reston Virginia based networking firm, over **25,000** organizations use the Internet in **35** countries. Internet sports an e-mail universe now of **25 million** individuals with over **two million** users access the network each day. About **25%** of this use is by commercial companies while **75%** is by Research and Education entities. Internet traffic is reported growing at a **20%** per month rate. As best we can calculate, this indicates it will encompass all life in the known Universe within another **40** months or so. Clearly, it's no longer really a select club, yet gaining access can be a problem for individuals and small companies.

The Internet, with a federally funded National Science Foundation backbone, is ostensibly closed to commercial traffic. But as a practical matter, Internet is increasingly offering the kind of connectivity attractive to companies and individuals for a variety of purposes connected to "research" by only the most strained definition. The **T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol (**TCP/IP**) is virtually swamping all other LAN interconnection schemes by virtue of its historical origins in Internet and the increasing number of networks adopting TCP/IP to connect to Internet. Internet has reached a critical mass in scope and participation that no other network can approach. IBM now offers TCP/IP on virtually every platform. Novell recently announced TCP/IP for Novell Netware. Microsoft just announced TCP/IP for LAN manager. Work groups all over the world are rapidly seeking to connect their local LANs to this burgeoning network of networks. The "critical mass" needed for connectivity on a global scale has been reached.

One company charging directly into the horns of these issues is Performance Systems International, Inc. of Reston Virginia. To address the issue of commercial use of the NSF backbone, they've joined with two other entities, UUNET and CERFNet to form the **C**ommercial **I**nternet **E**xchange or **CIX**. CIX offers an alternative backbone network for commercial connections - in theory addressing the issue of commercial use of a publicly funded backbone by bypassing it. Since it still connects to the remainder of Internet that does use the backbone, this theory is dubious at best. The thing keeping it afloat is that no one seems to have any better ideas on how to address the issue - leading to a dearth of objection.

As to commercialization in general, PSI basically IS commercially marketing access to the Internet. And with the exception of some marginally grandiose, or at the least, dubiously optimistic pricing issues, they're doing a pretty good job of it. The company has set up local telephone ports in 25 U.S. cities and plan on 40 cities by early next year. They market a variety of access level services from an ala carte menu. They are virtually the only entity we have found making a serious effort at providing Internet access to individuals on a national scale.

The most recent offering is one of the most basic, and at the same time interesting. In October, the company announced **PSILink**. This is basically Internet access at it's most rudimentary - personal e-mail - at a price of **$19** per month - a bit proud frankly for what it is, but still affordable for those who need Internet e-mail access and can't get it elsewhere.

PSILink Local Access Numbers

213.623.3677	CA Los Angeles
415.967.6561	CA Mt. View
415.777.0252	CA San Francisco
408.986.1151	CA Santa Clara
203.278.8110	CT Hartford
202.408.5297	DC Washington
404.659.6634	GA Atlanta
312.408.0675	IL Chicago
617.262.0688	MA Boston
201.645.1644	NJ Newark
609.890.6640	NJ Trenton
518.283.5090	NY Albany
716.883.6743	NY Buffalo
516.588.1170	NY Islip
607.277.8094	NY Ithaca
212.608.7800	NY New York
716.262.5670	NY Rochester
315.478.3191	NY Syracuse
315.797.1403	NY Utica
914.686.0075	NY White Plains
503.228.5660	OR Portland
215.563.1069	PA Philadelphia
214.744.2416	TX Dallas
713.652.9624	TX Houston
703.620.8971	VA Reston

PSILink works quite well. The only drawback we could find was that the company assigns a logon name and password and there is no easy way to change either of them. Most people on Internet try to create a domain address that is marginally mnemonic - **jrickard@boardwatch.com** for example. With PSILink, you'll likely have something like **PI0102@mail.psi.net** - not so easy to remember and you can't change it.

The most interesting thing about PSILink is the software you must use to access it. Most Internet e-mail services operate from the Unix command line. The Unix programs used to create, read, and write mail are not intuitive to use and it takes some study for most people to learn the esoterica of Internet mail. PSI has released a **$35** shareware program titled **PSILink** that automates the access to Internet e-mail. Rather than dialing into a host and using Unix mail programs to create, read, or reply to messages, you deal with mail on your own desktop machine using a

CRS OPENS USA ACCESS!!

Canada Remote Systems is pleased to announce the commencement of access through Detroit! US callers can now get access to one of North America's finest BBS's! Use your modem (8N1/ 1200-14400 baud) to call (416) 798-4713 now for your free, full-featured 30 minute demonstration of the many benefits of Canada Remote Systems! Then call us at (313) 963-0663 or (800) 465-7562 to join!

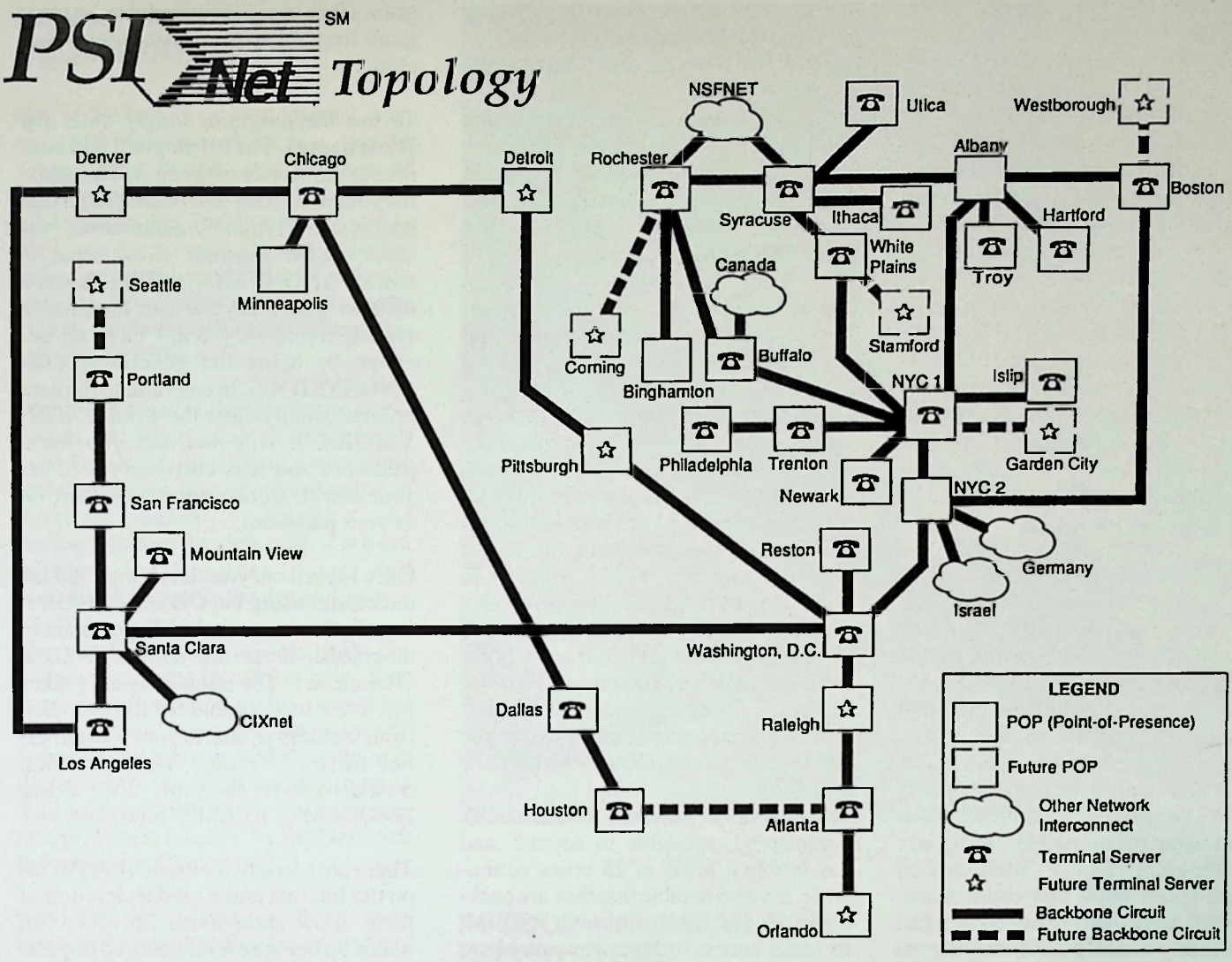
For only $99/year you get:

NEW!!

- **Over 300,000 files on-line!**, with an on-line storage capacity of over **19 Gb!** (yes that's **19,000 megabytes** of storage!)
- **143 incoming lines!**
- Over **2,500 Conferences** or Forums for different topics, through **10 major international e-mail networks**
- Full ***USENET*** **access** for "newsgroups" and private e-mail
- "Live" newsfeed from ***UPI!***
- **CD-ROM reference material**, including; ***Grolier's Encyclopedia, On-Line Hotline News, Microsoft Reference Library,*** **and** ***Computer Select*** - with more to come!
- **Daily stock market results from seven major exchanges!**
- Large **Adult file area** (2,600 Mb!)
- **2 hours/day access, 2Mb download/day!**
- **Never any on-line charges!**
- On-line magazines including ***Toronto Computes!, Microbytes, Newsbytes,*** **and** ***Boardwatch Magazine***
- **FREE Hotline Technical Support**
- We support **IBM, Macintosh, Amiga, Atari, Apple II, C64/128, CP/M, and NeXT!**
- **On-line gaming and CHATs**

CRS CANADA REMOTE SYSTEMS

1331 Crestlawn Drive, Unit 'D'
Mississauga, Ontario, L4W 2P9
Phone: (313) 963-0663 or (800) 465-7562



windowed, mouse-driven interface that we have to admit is pretty capable. You can read messages, write messages, create a directory of e-mail addresses, and save messages to named "folders" for later review. Once you have "done your mail", you simply click on **CONNECT** and the system dials the PSI host, swaps mail, and disconnects. A complete list of all 25 hosts with telephone numbers is included and you can dial into ANY of them to do mail. As a result, you can often log into a PSI host locally - even while traveling.

The program is shareware - but barely. Without the PSILink service, it doesn't do anything, and registration is required before you can use PSILink, but you can download it and get an idea of how it works. It is available for ftp on Internet at **ftp.psi.COM** in the **psilink** directory. We will also have it available for download on the Boardwatch BBS at **(303)973-4222** for our online subscribers.

The program is designed to install from floppy and oddly, we found you couldn't. After entering some basic information, we were supplied with the startling error message that we had a sharing violation on drive **A:** Since we weren't sharing anything to our knowledge, we must assume this was simply a humorous tip of the hat to the usual Unix strategy of emitting dozens of nonsensical error messages that almost never have any relationship to the real problem - if there is one. We simply copied all the files to our hard drive and ran **INSTALL.EXE** there without any further mishap.

Interestingly, **PSILink** is already drawing support from other vendors. One of the problems with Internet access is that there has been very few commercial offerings of the service large enough to warrant support from anyone else. Anterior Technology of Menlo Park California is intent on providing two-way radio links for e-mail using **PSILink** as the first service. Basically, they will forward all your **PSILink** e-mail to your laptop via Motorola's **ARDIS** radio service. They will also receive your radio transmissions and gateway that back into **PSILink**. The service is titled **RadioMail** and should be ready in the first quarter of next year. By November 1 they will offer a one-way version that works with paging services. Internet inquiries to **info@radiomail.net**. Anterior Technology, PO Box 1206, Menlo Park CA 94026; **(415)328-5615**.

Poqet Computers plays an initial role in this as well. They've received some attention over the last year with their tiny palm top PC. Roughly the size of a videocassette, the Poqet is one of the most portable PCs in existence and you can actually touch type on it - barely. Recent rumors indicate the company is releasing a new model with a built in cellular modem and packaging it with a

Motorola ARDIS radio interface unit allowing two-way radio data communications in a very portable package.

Future enhancements for **PSILink** include **Usenet News Groups** and **ftp** access. Usenet News Groups is a set of shared topical message conferences - as many as **2000** of them, on different topics. This is the Internet equivalent of "bulletin boards" with users from around the globe posting public messages on various topics. The **ftp** (file transfer protocol) access will allow you to download files from directories on various archive machines scattered over the Internet. According to Julie Sprinkel of PSI, the addition of these two functions will incur additional costs, but pricing had not been set yet.

The company provides numerous other Internet access options from **PSILink** (**$19** monthly) up through their turn-key **Standard Connection Service (SCS)** offering direct integration of your LAN into the Internet at **3.0 Mbps** (**$85,000** annually PLUS dedicated line costs). One level of access of considerable interest to BBS operators is their **UUPSI** service. This provides dial up access to systems using the normal **U**nix-to-**U**nix **C**opy **P**rogram (**UUCP**) mail session via high-speed **9600 bps** connections. Simple UUCP e-mail is priced at a flat **$25** monthly while e-mail and Usenet News Groups together go for **$75** per month. There is an initial **$75** setup fee, but PSI registers your system for its own unique domain name in the Internet. Your system can then be **EXEC-PC.COM** or whatever and your callers would be **JOE.BLOW@EXEC-PC.COM** for example.

For many, connection to Internet means the ability to actually logon to databases, university libraries, and many bulletin board type systems interactively. This is normally done using the programs **telnet** or for Unix systems - **rlogin**. PSI has two services to provide such access: **PSI Global Dialup Service (GDS)** and **PSI After Dark Service (ADS)**.

The PSI GDS service is limited to **300-2400 bps** connections but is available 24 hours daily. With any PC, modem, and terminal program, you dial a PSI host, logon giving your account information, and connect to anything on Internet allowing such connections by entering **CONNECT {hostname}**. PSI GDS requires a **$39** setup fee and **$39** monthly.

PSI ADS service, by contrast, allows **9600 bps V.32** connections but is limited to the hours between **6:00 PM** and **6:00 AM** Eastern Standard time and 24-hours on weekends. It's priced at **$35** per month with a **$35** setup charge.

Numerous regional entities are currently providing Internet access and many are doing so at much lower cost than PSI. Most however, have geographic restrictions on who they serve and many are tied to state or university agencies. Here in Colorado, Colorado SuperNet offers virtually unlimited access to Internet at **$2** per hour - allowing e-mail, UUCP connections, ftp, telnet, and your own file space - but only to Colorado residents. Many universities across the nation provide Internet access by request at no charge. For basic Internet e-mail service, **Heartland FreeNet** in Peoria Illinois provides an Internet e-mail box at no cost at all other than the call to their service **(309)674-1100**.

PSI is notable primarily because it IS commercial, available to anyone, and has terminal hosts in **25** cities nationwide. It's also notable that they are packaging access with software in **PSILink** to make access to Internet available to those who don't wish to take a course in UNIXology to be able to send a simple e-mail message. They are among the first of what we see as a coming wave of groups aggressively marketing Internet access to the masses.

Performance Systems International, Inc., 11800 Sunrise Valley Drive, Ste. 1100, Reston, VA 22091; **800-827-7482** voice; **(703)620-4586** fax; e-mail: **info@psi.com**.

LIST OF FTP SITES AVAILABLE.

Probably the most popular use of electronic bulletin boards is downloading shareware or public domain software programs. The Internet too has a corresponding function - also quite popular - known as **ftp**. The File Transfer Program (**ftp**) is used to download a program from an archive host to your machine.

To use the program, simply enter **ftp {host name}**. The ftp program will connect to the service and you will be asked for your user name and password on that host system. Typically, a number of systems on the Internet allow what is termed **ANONYMOUS FTP.** This is a method where anyone can logon to a system where they don't have an account, by using the generic account **ANONYMOUS**. In response to the user prompt, simply enter the word **ANONYMOUS**. It will then ask you for a password and it is customary to enter your user ID from the system you are on as your password.

Once logged on, you can change and list directories using the **CD** and **DIR** commands. Once you find a file you want to download, enter the command **GET {file name}**. The transfer usually takes just a few seconds and the file is copied from the archive host to your local Internet host directory. You can then download it to your PC using ZMODEM or KERMIT protocols.

There are literally thousands of systems on the Internet and a modest fraction of them allow anonymous ftp. This still winds up being several hundred popular library systems. Generally, it is considered good form to only use anonymous ftp during non-prime hours.

Jon Granrose actually maintains a list of ftp sites where you can download files. The list itself is available at **pilot.njin.net (128.6.7.38)** in the directory **/pub/ftp-list**. The file name is **ftp.list** and it contains hundreds of systems where you can download files. To get the list then using the ftp program:

ftp pilot.njin.net
logon name: **anonymous**
password: **jrickard**
cd /pub/ftp-list
get ftp.list

The list is then copied to your home directory on your Internet host. Subsequently, you can use the ZMODEM file transfer protocol to download the file to your desktop by entering **sz ftp-list**.

DOMAIN NAME REGISTRATION

One of the factors causing Internet to be an overnight success story - twenty years after it started - was adoption of the domain name system of electronic mail addressing. Previously, to send e-mail, you were required to describe the path the e-mail must take to actually travel to a particular network and individual - including all intermediary systems in the path.

With the advent of domain name registration and smart mailers, this was reduced to simply specifying a user name and destination host (domain) name in most cases such as **jrickard@boardwatch.com** where **jrickard** is the user name and **boardwatch.com** is the domain name.

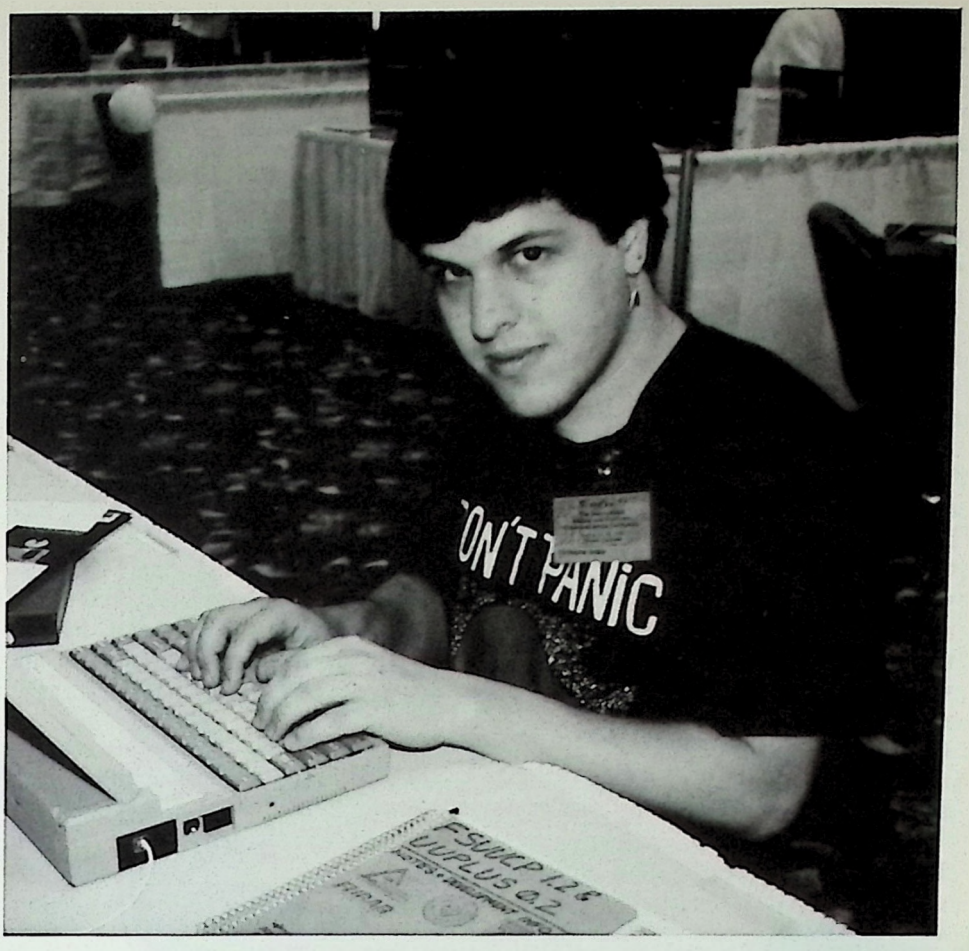
The question comes up, where do domain names come from? Actually, there is a registration process where you apply for a domain name and on approval, your domain name is added to the map files used by the smart mailers to route mail to your destination. This registration process is handled by the **Network Information Center (NIC)**.

Until October 1 of this year, this domain registration was handled by a company titled SRI International of Menlo Park California who acted as the NIC for Internet. They maintained a host on the network that not only handled domain registration issues, but provided a full array of help files, information files, and RFC (Request For Comment - the closest thing to documentation of the Internet that exists).

As of October 1, 1991, the NIC was moved to Chantilly Virginia and is now administered by:

Government Systems, Inc.
Attn: Network Information Center
14200 Park Meadow Drive, Suite 200
Chantilly, VA 22021

Help Desk Telephone Numbers:
800-365-3642
703-802-4535
Fax Number:**703-802-8376**
Network Address: **192.112.36.5 (NIC.DDN.MIL)**
Root Domain Server: **192.112.36.4 (NS.NIC.DDN.MIL)**



Chris Ambler - Author of FSUUCP

FSUUCP - UNIX MAIL FOR DOS SYSTEMS

Most of the discussion of the future of online services seems to revolve around bigger systems, more services, and more callers - what does the system offer as an attractant to get callers ON to it. But the real future of online services - and particularly electronic mail - revolve around how to get them back OFF again. The ultimate paradigm is true desktop-to-desktop communications - where I draft a message on MY machine and it shows up on YOURS or versa vice with as much transparency of process through the intermediary networks and online services as is possible.

There has been some progress - most of it NOT from the online services themselves. Users of large commercial services such as CompuServe and GEnie have developed shareware programs such as TAPCIS and ALLADIN to allow them to deal with mail OFFLINE - minimizing their connect charges. In the BBS world, we're seeing an enormous surge in popularity in offline mail readers such as QMail Deluxe, EZ-Reader, XRS, and Silly Little Mail Reader - programs generally developed to minimize long distance toll charges. Basically, you pull the trigger and they go get your mail - both personal e-mail and any new messages from conference areas that you may be monitoring. You can then read and respond offline.

For systems that charge flat-rate pricing - increasingly the model for online economics - these offline mail readers are also a boon. They dramatically reduce the load on the system.

Internet has grown to the point where it offers a reach and scope for e-mail no other entity can match. The Soviet Union, Japan, Asia, and the Middle East as well as the majority of commercial e-mail services are just a few minutes, or at most an hour or so, away. This will most probably have a snowball effect. The more people connected to Internet, the more attractive the connection becomes to anyone who isn't.

Most of the host systems on Internet that offer public access use the UNIX operating system. UNIX comes with a suite of programs to deal with electronic mail and specifically to port mail in an automated fashion to other UNIX systems. The Unix-to-Unix Copy Program (**UUCP**) is actually a suite of communications programs used to pass mail between UNIX systems - often by modem. So, if you happen to run the UNIX operating system, it is quite possible to use UUCP to connect to another UNIX system that is connected to the Internet.

The problem with this is, of course, that most of us do NOT use UNIX. UNIX has been the operating system of the future for over two decades and God willing and the creek don't rise it will remain the operating system of the future for at least another decade or two - with an option for extension. Most of us use personal computers based on IBM's PC-DOS or Microsoft's MS-DOS - nearly enough the same for the purposes of this discussion.

But **UUCP** remains the most effective commonly available dialup port to UNIX hosts on the Internet. There are some better methods involving the Serial Line Internet Protocol (**SLIP**) and the Point-to-Point Protocol (**PPP**) that we'll be dealing with in future issues of Boardwatch, but they are not yet commonly offered at this time. So the obvious "way in" to deal with Internet e-mail from an offline platform is through the UUCP port.

Chris Ambler, a student at CalPoly University, has done something that would have previously been considered bizarre - he's duplicated the esoteric UNIX UUCP and mail programs on a DOS machine. He calls the resulting product **FSUUCP** and is marketing it as shareware at a **$35** registration price. It allows you to setup UNIX communications on a laptop computer and "fetch" your mail at your convenience to read and respond to offline - the Internet version of QMail Deluxe or EZ-READER. And if anything, he's done too good a job of it. It uses precisely the same suite of little programs, blindingly complicated directory structures, and the programs even issue many of the same grossly misinformative error messages if you have a problem. Perhaps it's our own unfamiliarity with UNIX, but every UNIX error message we've ever seen was always the result of a problem that had no possible connection to anything you would think the error message was referring to. When you get an error message from a UNIX system, you only know one thing - you have a problem - maybe.

In any event, **FSUUCP** not only allows you to gate your personal e-mail from your laptop or desktop system to your Unix host, but it also allows you to download Usenet News Groups. Usenet News Groups are like BBS message areas, FidoNet echomail conferences, etc. And just like QMail Deluxe, EZ-Reader, and SLMR, FSUUCP allows you to participate in precisely the message areas you select. The difference is that News Groups are global, have a much wider readership, and there are more of them.

FSUUCP consists of a series of programs that handle mail, including:

ACTMAKE
BATCHER
EXPIRE
FIXACTIV
MAIL
POSTNEWS
READNEWS
RMAIL
RNEWS
UUCICO
UULOG
UUQ
UUSNAP
UUXQT

The most notable of these are **MAIL**, which allows you to read and write e-mail messages, **UUCICO** (Unix-Unix Copy In Copy Out) which actually handles the mail swapping session with the host, and **READNEWS** and **POSTNEWS**, which allow you to read and write to the Usenet News Groups.

Installation of FSUUCP is not trivial. This is actually a flaw shared by almost all offline mail programs we've looked at. The installation of most offline mail programs for commercial services or electronic bulletin boards is just too techie and this is about the ONLY reason everybody isn't using these programs. But FSUUCP installation is truly miserable - partly because of the complex directory structure exacerbated by the blindly idiotic error messages that give no hint as to why you're really having a problem. It's also partly due to abysmal documentation - another UNIX tradition.

We can say this is improving. In the most recent release we looked at, **Version 1.2 Release 3,** an **INSTALL.EXE** does attempt to set up your directories for you. And we are assured that release **4** will be even better. One of the problems Ambler faces is that he lives in a UNIX world and most of his friends and beta testers are likewise comfortable with UNIX. It makes sense to them. It won't to anyone else.

The first step in installation is actually to contact your Host system administrator to get a UUCP account set up. You will need some basic items of information from them.

Your SYSTEM NAME
Your UUCP LOGON
Your PASSWORD
System Telephone Number
The HOST system name.
A sample logon script.

In our case, we applied for a domain name of **BOARDWATCH.COM**. This involved filling out a simple form and paying a registration fee of **$20** to register the name with the Network Information Center. This becomes our system name. Our logon name is the first eight characters of our system name - **boardwat**. Our password is confidential. Our host is Colorado SuperNet - known as **CSN**.

After you have this information and your Host system administrator has setup your UUCP account, install FSUUCP using the provided install program. When it's completed, you'll have to alter two basic files - **FSUUCP.CFG** and **SYSTEM**.

FSUUCP.CFG contains your system name, logon name, host name, your user name (i.e. **JRICKARD**), along with the usual modem initialization strings. The **SYSTEM** file, which is buried a convenient half dozen directory levels down, actually contains the logon script for your host system. These are like no scripts you've ever seen before. All script functions are basically stored on a single line and look something like:

rjgumby Any Hayes 2400 ATDT5413958 "" ogin: fsuucp ssword: lumberjack

This is the script for the **rjgumby** system. It dials the telephone, swaps some carriage returns, at the Unix **login:** prompt it replies with **fsuucp** and at the **password:** prompt replies with **lumberjack.** This is the initial logon process the **UUCICO** program uses to dial and logon to your host system. All processes required thereafter to swap mail are performed by **UUCICO** quite automagically. Your host system administrator can usually provide a sample logon script string to use.

Some of this installation agony is probably necessary given that you are installing software meant to interact with someone else's software. But we'd like to see FSUUCP get a little more aggressive in allowing you to enter some of this information in response to simple questions where possible.

In use, Unix aficionados are going to love this program. The individual programs work much as they would on a Unix system. The result for DOS users is a program that may appear a little daunting to use as well. Ambler is very much a fan of a Nutshell book titled ***Managing UUCP and the Usenet***, available from O'Reilly & Associates, Inc. 103 Morris Street, Sebastapol, CA 95472; **800-338-6887** voice. We would like to see a better effort at documentation within FSUUCP itself.

MAIL works much like **MAIL** on any UNIX system.
MAIL JRICKARD@BOARDWATCH.COM would create a message for me on the Boardwatch domain. A full-screen editor is called to actually create the message and the editor in FSUUCP is quite adequate. You can specify another editor if you would prefer.

Product support will likely be a big issue with FSUUCP. Ambler actually has a mailing list devoted to FSUUCP. You can join the list by sending a request to **fsuucp-request@zeus.calpoly.edu**. Mail to **fsuucp@zeus.calpoly.edu** goes to the entire list.

FSUUCP occupies a little over **1.1 MB** on your hard drive. In fairness, most of our criticisms of FSUUCP come directly from its UNIX heritage, and that is actually the point of the program. The philosophy was to duplicate the UNIX utilities on a DOS platform and Ambler has done a pretty sound job. We were actually VERY excited when we first learned of this program and it is very much still in development. Rather than logon to **CSN** and camp there to read and reply to e-mail, we now enter a single command at the DOS command line and our computer calls their computer and does an electronic e-mail lunch. We can then read and respond to our e-mail at our leisure and pull the trigger again later to send out the replies. It's actually made life around here much easier with the computer doing a bit more work and the little fat editor doing a bit less. It also reduces the load on CSN.

FSUUCP is currently available in the file **FSUU12R3.ZIP**. It's available for **ftp** from **polyslo.calpoly.edu** in the **/pub** directory. Alternatively, Boardwatch BBS subscribers can download it from our system at **(303)973-4222.** The program carries a **$35** registration fee. Ambler is also working on a BBS software program incorporating Internet access with a December 1991 release date. A commercial version of FSUUCP with a slicker interface will be released in early 1992 under the name **UUPlus.** Christopher J. Ambler, Fubar Systems, 1742 Lima Drive, San Luis Obispo, CA 93405; **(805)543-8491** voice; Internet: **chris@zeus.calpoly.edu.**

THE WAITE GROUP'S UNIX COMMUNICATIONS

We've reached the point where when we see a computer book with **Waite Group** on the cover, we assume it will be a good one. Mitchell Waite has engineered some of the best works available on very technical subjects. And we weren't making much headway learning to use the UNIX mail utilities necessary to deal with Internet mail. So when we saw ***The Waite Group's UNIX Communications - Second Edition***, by Bart Anderson, Barry Costales, and Harry Henderson - we made an editorial lunge for it. We weren't disappointed.

The book is divided into three sections: UNIX Mail, UNIX NEWS - USENET, and UNIX File Transfer - UUCP. We found each useful.

UNIX Mail answers a lot of questions about sending personal e-mail over Unix systems and the Internet network. In accessing the Internet, we've encountered a number of programs, including MAIL itself, where we may have missed some of the finer points of operation along the way. The UNIX Mail section addressed them in a very clear concise manner and showed us how to use aliases, send mail to lists, organize mail into folders, and pretty much provided a full tutorial for using the MAIL program. Even better, this section of the book described alternatives to MAIL, more advanced programs such as ELM, MUSH, and MH. We didn't even know these utilities were available but after reading the book, we found them fully operational on the Colorado SuperNet system.

Part 2 of the book covers Usenet News Groups. It provides an ample description of the history and organization of USENET and the use of the READNEWS program used to participate in news groups. Better, it described more powerful alternatives such as VNEWS, and NONEWS and of course described how to post a message with POSTNEWS.

Part 3 covers UNIX File Transfer with UUCP. This doesn't quite provide enough information to administer a system, but it does provide an adequate explanation for most users as to what UUCP is, what it can do, and how you might use it.

The **736** page book provides an excellent introduction and user manual for those who want to learn to use some of the communications tools available to Unix - without becoming mired in learning the entire operating system from the ground up. It provides numerous examples of specifically what to enter from the keyboard to cause a particular desired result and we found it very easy to follow. It does not describe programming UNIX communications nor does it delve deeply into some of the esoterica necessary to setup and administrate a system. Actually we found that a plus. It's a basic reference guide for those who use the network. Our highest recommendation. The book is priced at **$29.95**. The Waite Group, 100 Shoreline Highway, Suite 285, Mill Valley, CA 94941; **(415)331-0575** voice. CompuServe: **75146,3515**.
Internet: **hplabs!well!mitch**.

SPACE SHUTTLE E-MAIL

As part of an effort to develop communications for space station FREEDOM currently under development, NASA has begun experimenting with shuttle-to-earth electronic mail.

In a recent voyage of the space shuttle Atlantis, Astronauts Shannon Lucid and James Adamson exchanged electronic mail from their Macintosh laptop with shuttle communicator Marcia Ivins at Johnston Space Center in Houston.

The messages passed from the shuttle through one of NASA's Tracking Data Relay satellites, to the TDRS ground station in White Sands, New Mexico where it was linked to Houston through a commercial satellite carrier.

The link was designed by Byron Han, James Beninghaus, and Michael Silver of Apple computer who used pretty common commercial mail elements to do so.

One of NASA's fears in setting up the experiments was that inquisitive computer enthusiasts might join the party - and it would appear they did. While there had been similar electronic mail experiments via amateur packet radio to the Soviet Space Station Mir as well as the HAM AMSAT orbital BBS satellites, this was the first experiment that actually used an existing e-mail network - Internet. And while NASA sought to avoid publicity for the project, it was a matter of hours before e-mail inquiries started. An earth-only mailbox was setup at atlantis@applelink.apple.com and about 85 messages from curious online users piled into the mailbox setup for the experiment. This e-mail did not traverse the link to Atlantis itself. Atlantis was commanded by Air Force Colonel John Blaha.

SOVIET PARTICIPATION IN INTERNET - GLASNET

The Soviet Union is increasingly connecting to the international networks. We recently inquired about a new network in the Soviet Union titled **GlasNet** offering service to a wider segment of Soviet society. We received a response from Anatoly Voronov, GlasNet Executive Director, we found most enlightening. We thought in this case, his announcement stands pretty well on its own - presented herein for your consideration.

Dear Jack:

I am sending you a copy of the GlasNet press release. I hope it will be useful for establishing contacts with your Soviet counterparts through our network. Please feel free to ask questions in case you have a particular Soviet citizen or organization to contact.

Best regards.

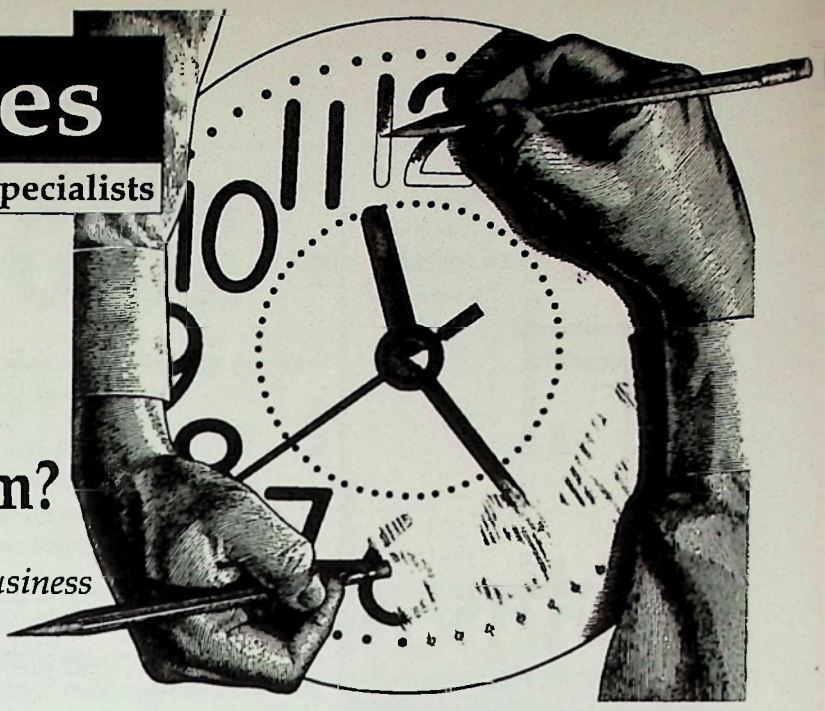
Anatoly Voronov, GlasNet Executive Director.

"GlasNet" - A new Soviet Computer Network for Information Interchange.

A new computer network called "GlasNet" has been installed in Moscow by The International Foundation (Moscow, Washington, Munich, Sofia) and The Institute for Global Communications (San Francisco). GlasNet is the first non- profit, non-governmental telecommunications network to be established in the Soviet Union.

GW Associates

Communications and Information Systems Specialists



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There's a lot available for the TBBS/TDBS System Operator, as well as for anyone interested in an Information System (BBS). If you want to learn more about TBBS/TDBS just call our system and look through Our Demonstration and Sales Area and register as a customer. GW Associates offers full support to all System Operators and we have several excellent programmers available to help with your applications and customization. Please call our system at (508) 429-1784 (N,8,1) and keep up with our new releases or call us on our voice line at (508) 429-6227 if we can help you in any way. Installing and remotely supporting commercial systems is our ONLY business!

TBBS/TDBS SYSTEM ENHANCEMENT SOFTWARE

User Manager

The new User Manager for TDBS systems, the full registration and member tracking system that is a true member data base. It has keyword search, on-line user resumes to help users get to know each other, a notepad to let you keep notes on every user, etc. It will present SysOp defined text messages on pending expiration of membership and make the necessary access changes on expiration Allows users to join as members or renew their membership using credit cards on-line. This program is priced at $69.95

Message Manager

The Message Manager for TDBS systems. Some of the highlights of this package are: Support for up to 10,000 message areas; SysOp configurable full screen editor; SysOp configurable reply quoting; the capability of editing messages after they are saved; users can change several read options at any time and save them to disk to make the changes permanent; users can subscribe to up to 60 areas and see all the new messages in each area when they enter the message menu; complex search capability on any combination of FROM, TO, or SUBJECT fields; message text can be searched for strings; FidoNet format message import and export utilities are available. This program is priced at $179.00.

Sales Manager

The powerful and productive On-Line Sales Manager. This on-line catalog sales program is written by Jeff Johnson, another pioneer in TDBS software, and it easily shows the power and capabilities of TBBS and TDBS. The Sales Manager will display a catalog of items for sale under categories you specify, each item can have a full descriptive text file attached to it and the user can place an order at any time and continue to browse through the catalog. When done the user selects to order and is presented with each item and given the opportunity to indicate how many are to be shipped. Developed as a modular package this software will handle everything from a low level order entry system to a fully featured point-of-sale package and do all the things you would expect of a full sales package. Please come and work with it on-line. Prices start at $395.00.

On-Line Entertainment

The extremely popular game of StarQuest. This is the first multi-play, multi-user space game to run under TBBS/TDBS. You can create a universe of a size that is best for your system and its users and your users create and capture settlements and become active wheeler/dealers across your universe. Their settlements can be attacked and captured whether the user being attacked is on-line or off, and as the users gain in strength and worth the computer controlled pirates and the tax assessor will be there to lend a helping hand. This on-line multi user game has already proven itself to be popular with the users and it's not only a lot of enjoyment for them, but it can quickly pay for itself on systems charging for access. This program is priced at $149.95.

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Voice Phone (508) 429-6227
Data Line (508) 429-1784

BOARDWATCH MAGAZINE

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SERVICE	TELNET ADDRESS	DIALUP	LOCATION	VOICE HELP	PROMPT1	RESPONSE1	PROMPT2	RESPONSE2
Boston University Library	library.bu.edu	(617)353-9601	Boston MA	(617)353-3704	blank screen	Connect Bux	Bux	Telnet Library
Brown University	brownvm.brown.edu	None	Providence RI	(401)863-2167	Command	DIAL JOSIAH	Specific NodeID	ESC-1
California Polytechnic	library.calpoly.edu	None	San Luis Obispo CA	(805)756-2190	LOGIN:	POLYCAT		
Carnegie Mellon University	cmulibrary.andrew.cmu.edu	None	Pittsburgh PA	(412)268-2442				
Cleveland Freenet	freenet-in-c.cwru.edu	(216)368-3888	Cleveland OH					
Colorado Alliance Research Lib	pac.carl.org	(303)863-1350	Denver CO	(303)861-5319	None			
Cornell University	cornellc.cit.cornell.edu	None	Ithaca NY	(607)255-4144	blank screen	LIBRARY		
Dartmouth College	lib.dartmouth.edu	(603)643-6310	Hanover NH	(603)646-2999	@	CONNECT LIBRARY		
Emory University Libraries	emuvml.cc.emory.edu	None	Atlanta GA	(404)727-0271	CPREAD	DIAL VTAM	VTAM	LIB
Florida State Univ. System	nervm.nerdc.ufl.edu	None	Tallahassee FL	(904)644-5211				
Kent State University	catalyst.kent.edu	None	Kent OH	(216)672-2962				
Lehigh University	asa.lib.lehigh.edu	None	Bethlehem PA	(215)758-4998				
Michigan State University	merit.msu.edu	(517)353-8500	East Lansing MI	(517)353-6752	Which Host?	MAGIC		
New Mexico State University	library.nmsu.edu	None	Las Cruces NM	(505)646-1508	:	hello user.libr01		
New York University	bobcat.nyu.edu	None	New York NY	(212)998-2490				
Northwestern University	pacx.acns.nwu.edu	None	Evanston IL	(708)491-7658	ENTER CLASS	60		
Ohio State University	cs.us.ohio-state.edu	(614)292-3070	Columbus OH	(614)292-6151	host name:	LCS	password:	^LCS
Princeton University Library	pucable.princeton.edu	None	Princeton NJ	(609)258-3180	#	CALL 500		
Purdue University	lib.cc.purdue.edu	None	West Lafayette IN	(317)494-2857	DIAL	LIBRARY	graphictype	THOR
Rensselaer Polytechnic Inst.	infotrac.rpi.edu	(518)276-8990	Troy NY	(518)276-8310	Which Host?	INFOTRAX		
Texas A&M University	venus.tamu.edu	None	College Station TX	(409)845-8111	Username	VTAM	Texas A&M	NOTIS
Univ. of California Berkeley	gopac.berkeley.udu	None	Berkeley CA	(415)642-3532	None			
Univ. of California MELVYL	melvyl.ucop.edu	None	Oakland CA	(415)987-0700				
Univ. of ILL Urbana-Champaign	garcon.cso.uiuc.edu	None	Urbana IL	(217)333-8400	login:	LCS		
Univ. of New York Binghampton	bingvmc.cc.binghamton.edu	None	Binghampton NY	(607)777-4331	Logo	DIAL VTAM	Suny Public Inf	1
Univ. Wisconsin Madison	nls.adp.wisc.edu	(608)262-8670	Madison WI	(608)262-8880	WISC	NLS1		
University of Delaware Library	delcat.udel.edu	None	Newark DE	(302)451-2965	terminal	TYPETERM		
University of Ill at Chicago	uicvm.uic.edu	None	Chicago IL	(312)996-2716	Log on	DIAL PVM	PVM	NOTIS
University of Kansas Library	kuhub.cc.ukans.edu	(913)864-5370	Lawrence KS	(913)864-0110	User Name	RELAY	CICS-VS	OCAT
University of Main Systems Lib	ursus.maine.edu	None	Orono ME	(207)581-1660	LOGIN	ursus		
University of Maryland	umcat.umd.edu	None	College Park MD	(301)454-7332	blank screen	CAT		
University of Michigan	cts.merit.edu	(313)763-4800	Ann Arbor MI	(313)764-9356	terminal type:	VT100	Which host?	mirlyn
University of Minnesota	lumina.lib.umn.edu	None	Minneapolis MN	(612)626-2272				
University of New Mexico	bootes.unm.edu	None	Albuquerque NM	(505)277-4848	login	STUDENT1		
University of Notre Dame	irishmvs.cc.ndu.edu	None	Notre Dame IN	(219)239-5252	Enter Command	LIBRARY		
University of Oregon Knight L.	janus.uoregon.edu	(503)346-3565	Eugene OR	(503)364-3053	Enter Class:	uonet	UOnet	c janus - janus
University of Pennsylvania	pennlib.upenn.edu	None	Philadelphia PA	(215)898-7555				
University of Tennessee	dca.utk.edu	None	Knoxville TN	(615)974-4127	HOST NAME	library		
University of Texas Arlington	admin.ari.utexas.edu	None	Arlington TX	(817)273-3000	VTAM	NOTIS	CICS	LUUT
University of Texas Austin	utaus.cc.utexas.edu	(512)471-9420	Austin TX	(512)471-3811	CLASS=	UTCAT	Univ Texas	UTCAT
University of Texas Dallas	ibm.utdallas.edu	None	Richardson TX	(214)690-2950	clear screen	library	command	LIBRARY
University of Utah Marriott	lib.utah.edu	None	Salt Lake City UT	(801)581-7994	Logon	D UNIS		
Virginia Polytechnic Institute	128.173.5.4	None	Blacksburg VA	(703)231-5593	CBX	CALL VTLS		

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Boardwatch Magazine 12/89

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The purpose of GlasNet is to offer easy and inexpensive information exchange between diverse groups within the USSR, including scientists, educators, cultural groups, journalists, environmentalists, computer enthusiasts, and so forth. It will also enable these Soviet groups to correspond electronically with their counterparts in the Americas, Europe, and Asia. GlasNet is intended to serve the communication needs of pro bono groups in the USSR who could not otherwise afford modern communication services. Charges to non-commercial GlasNet users in the USSR will be entirely in rubles, and kept as low as possible while maintaining good system services.

GlasNet will belong to the Association for Progressive Communications (APC), a global network-of-networks with host computers in Australia (Pegasus), Brazil (AlterNex), Canada (Web), Great Britain (GreenNet), Nicaragua (Nicarao), Sweden (FredsNaetet), and the USA (PeaceNet,EcoNet). The system uses the standard APC electronic mail, conferencing, and networking software. It will support 5,000 user accounts in the USSR, of which 10 to 30 can be on line simultaneously. The first GlasNet host, a 386 computer, is undergoing post-installation tests in Moscow. The network officially opened to public users on May 30, 1991.

Collaboration among scientists, business people, and other others in the West has been facilitated in recent years through the use of computer-based electronic mail and conferencing capabilities, allowing people in different parts of the country or even different parts of the world to work on joint projects, access data banks and information in other computers, and electronically publish new work. These powerful capabilities are now becoming available to the general public, the non-profit community in particular, through such services as PeaceNet and EcoNet.

It is the goal of GlasNet to provide similar performance-enhancing services to the fast-emerging independent sector in the USSR, offering Soviet users easy access to friends, colleagues, and new contacts throughout their own country and abroad.

The initial services available to GlasNet users will include:

Electronic Mail

GlasNet subscribers will be able to exchange messages with other users around the world within the APC network, or with users belong to several dozen other networks (like Internet, Bitnet, and MCI Mail) through APC "gateways."

Electronic mail overcomes the cost and problems of telephone use. A Message is composed at the user's convenience, then quickly sent by the GlasNet computer to its destination in the addressee's "mailbox," which may be in Moscow or halfway around the world. When the person to whom it is sent logs in to their local network host computer, the message is waiting. Transmission is immediate, and there is no need for both parties to be present simultaneously. Email costs are less than those of long distance telephone calls or air parcel services, and GlasNet users can also employ the system to send FAX and telex messages worldwide.

BOARDWATCH MAGAZINE

LIST OF BBS SOFTWARE VENDOR PRODUCT SUPPORT/DEMO BULLETIN BOARD SYSTEMS - NOVEMBER 1991

APPLE MACINTOSH/II

PRODUCT	COMPANY	BBS PHONE	NOTES	VOICE	MAILING ADDRESS
Hermes	Frank Price/AOC Software Inc.	(213)275-6975	MAC - Multiline BBS for Macintosh - Very good		612 Doheny Road, Beverly Hills, CA 90210
Proline	pro-sol/Morgan Davis	(619)670-5379	Apple II/GS - Unix lookalike BBS - Usenet News	(619)670-0563	10079 Nuerto Ln, Rancho San Diego, CA 92078
Second Sight	FreeSoft Company	(412)846-5312	Single Line BBS Software for Macintosh (prev Red Ryder)		(412)846-2700105 McKinley Road, Beaver Falls, PA 1
Tabby	Michael E. Connick	(201)988-0706	MAC - Fidonet Mail Interface for Macintosh		PO Box 307, Bradley Beach, NJ 07720
Telefinder	Spider Island Software	(714)730-5785	Multiline Macintosh BBS - up to 20 lines	(714)669-9260	4790 Irvine Blvd. Ste.105-347, Irvine, CA 92720

IBM/MS-DOS

PRODUCT	COMPANY	BBS PHONE	NOTES	VOICE	MAILING ADDRESS
DCI	Nordevald Software	(813)961-0788	DOS		POB 280138, Tampa, FL 33682
DLX	Baudtown	(818)893-7600	Multiline - 32 lines - excellent chat/social system.	(818)893-2321	17939 Chatsworth St. #192, Granada Hills, CA 91344
Falken	Info*Share	(703)803-8000	DOS/Multiline-16 lines-runs ext programs		P.O. Box 1501, Woodbridge, VA 22193
Fido	Tom Jennings	(415)863-2739	DOS/Single Line - Original Fido BBS Software	(415)861-7183	Box 77731, San Francisco, CA 94107
GAP	GAP Development Co.	(714)493-3819	DOS/LAN 99 Nodes - Fast ISAM Searches		24242 Porto Fino, Laguna Niguel, CA 92677
Genesis BBS	Carter Downer	(315)592-7300	DOS/LAN - Multinode - Flexible Doors		Box 267, Hannibal, NY 13074
InfoHost	A-Comm Electronics Inc.	(201)288-7792	DOS/Multiline - Database	(201)288-7885	377 Route 17 South, Hasbrouck Heights, NJ 07604
Kitten	System Enhancement Assoc.	(201)473-1991	DOS/Single Line - also SEADog Fidonet Mail Program	(201)473-5153	21 New Street, Wayne, NJ 07470
Major BBS	Galacticomm, Inc.	(305)583-7808	DOS/Multiline - 255 lines-chat-multiuser games	(305)583-5990	4101 SW 47th Ave #101, Ft Lauderdale, FL 33314
Maxihost	Don Mankin	(209)836-2402	DOS/Single Line - Small, Easy to Run		231 Market Place, San Ramon, CA 94583
Maximus-CBCS	Scott Dudley	(613)389-8315	FidoNet compatible BBS - multi-node	(613)389-6065	777 Downing Street, Kingston Ontario, Canada K7M 5
Opus-CBCS	Opus-CBCS Development	(412)366-5208	FidoNet compatible BBS - multi-node.	(412)364-4017	8024 Crest Road, Pittsburgh, PA 15237
Oracomm	Surf Computer Services	(619)346-1608	DOS/Multiline - 32 lines - social chat	(619)346-9430	71-540 Gardess Rd., Rancho Mirage, CA 92270
Osiris	Micro Tech	(314)334-6359	DOS/LAN Multinode 256 lines - Online Store	(314)335-5384	, Cape Girardeau, MO 63701
PCBoard	Clark Development Company	(801)261-8976	DOS/LAN-99 Nodes-Popular BBS for shareware BBS	(800)356-1686	PO Box 7135, Murray, UT 84107
QuickBBS	Creighton/Gabrilowitz	(407)896-0494	DOS/Single Line - Shareware clone of TBBS		POB 678255, Orlando, FL 32867
RBBS	Ken Goosens	(703)978-6360	DOS/LAN Multinode - Free - BASIC Source Avail	(703)978-4339	5020 Portsmouth Rd., Fairfax, VA 22032
Remote Access	Continental Software	61 9 389 8048	DOS/LAN 99 nodes - TBBS/QuickBBS clone -	61 9 386-5218	195 Adelaide Terr., Perth, Australia, 6000
Searchlight	Searchlight Software	(516)689-2566	DOS/LAN - Multinode - Visual and easy to use	(516)751-2966	PO Box 640, StonyBrook, NY 11790
Spitfire	Mike Woltz	(515)225-8496	DOS Single Line		, DesMoines, IA
TBBS	eSoft Inc.	(303)699-8222	DOS/Multiline - 64 lines per machine - good database	(303)699-6565	15200 E Girard Ave # 2550, Aurora, CO 80014
Tritel	Mark Goodman	(207)941-0805	DOS Multi-Node - Fido capable - offline mail		PO Box 187, Orland, ME 04472
UFGATE	Tim Pozar	(415)695-0759	Utility to import/export Usenet News from Unix Systems	(415)695-7727	671 28th St., San Francisco, CA 94131
Wildcat!	Mustang Software	(805)395-0650	DOS/LAN/250 Nodes - Very good on LAN installations	(805)395-0223	3125 19th St Ste 162, Bakersfield, CA 93301
WWIV	Wayne Bell	(213)208-6689	DOS/Single Line - C source available with registration		904 Silver Spur Rd. #636, Rolling Hills Est, CA 90274

OS/2 AND WINDOWS 3.0

PRODUCT	COMPANY	BBS PHONE	NOTES	VOICE	MAILING ADDRESS
Magnum BBS	Chuck Gilmore	(818)706-9805	OS/2/LAN-8 Lines per computer - looks like PCBoard	(818)706-9800	1285 Falling Star Ave., Thousand Oaks, CA 91362
Maximus-CBCS	Scott Dudley	(613)389-8315	FidoNet compatible BBS - multi-node	(613)389-6065	777 Downing Street, Kingston Ontario, Canada K7M 5
PowerBBS	Russel Frey.	(516)822-7396	Runs under Windows 3.0-Up to 8 tel lines. Doors	(516)938-0506	35 Fox Ct., Hicksville, NY 11801

UNIX

PRODUCT	COMPANY	BBS PHONE	NOTES	VOICE	MAILING ADDRESS
CocoNet	Coconut Computing, Inc.	(619)456-0815	Unix - Hires Graphics like Prodigy - term program	(619)456-2002	7946 Ivanhoe Ave Ste 303, La Jolla, CA 92037
TEAMate	MMB Development Corp.	(213)318-5302	Unix/Multiline - VT100 ANSI Graphics	(800)832-6022	904 Manhattan Ave., Manhattan Beach, CA 90266
XChange	Z/Max Computer Solutions Inc.	(315)622-4672	Unix - Pull Down Menus/Pop-up Windows	(315)622-4577	PO Box 339, Clay, NY 13041
Magpie	Steve Manes	(212)420-0527	DOS/UNIX Conferencing Software with unique threading	(212)533-1692	648 Broadway,Ste 300, New York, NY 10012
WAFFLE	Darkside International	(408)245-7726	DOS/UNIX - Provides UUCP function for DOS machines		PO Box 4436, Mountain View, CA 94040

3,999,999 Callers

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300,000 PROGRAMS AND FILES
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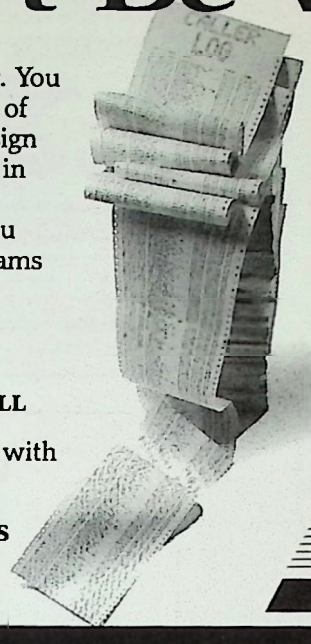
150,000 MESSAGES



EXEC-PC's unrestricted time use means more flexibility for you. . .so, take your time and peruse over 150,000 messages. EXEC-PC offers an end to "daily download panic."

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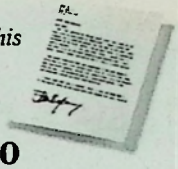

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Electronic Conferencing

An electronic conference is a written conversation with other users; a conference is created to discuss a particular topic or to facilitate communication between people working on a joint project. GlasNet users will be able to start their own conferences on topics of interest, or will be able to participate in on-going conferences on other APC networks.

Although personal computers and terminals have become quite prevalent in the USSR, there is presently a shortage of modems. A modem is necessary to allow the user's personal computer or terminal to communicate with GlasNet using an ordinary direct-dial voice telephone line. The International Foundation and the Institute for Global Communications are now soliciting in-kind donations for GlasNet by companies or individuals interested in helping Soviet non-governmental organizations obtain modems.

One of GlasNet's first activities will be participation in a joint program with APC, the Moscow-based organization Innovatsiya, The International Foundation, and PeaceNet Sweden (FredsNaetet) to train interested Soviet citizens in the use of e-mail. As part of this program 200 modems will be provided at low or no cost to Soviet non-governmental organizations.

GlasNet is sponsored jointly by the Institute for Global Communications, which created and operates PeaceNet and EcoNet in the U.S., and The International Foundation, a foundation created in 1988 by a multinational group of scientists and foundation executives. It is headquartered in Moscow, with offices in Washington, DC; Sofia, Bulgaria; and Munich, Germany. The International Foundation enjoys a special status in the USSR that allows it to create new organizations such as GlasNet as independent legal entities in the Soviet Union.

* - networks accessible through APC gateways include: Applelink, AT&T Mail, AT&T LandMail, Bitnet, BIX, CARINET, CGNET, CIGnet, CONNECT, COSY, CSNet, DASNET, DEC (Digital Corp.), DIALCOM, EasyLink, ECONET, EIES, Envoy 100, FAX, Fidonet, Galaxy, GeoNet, GTE, HandsNet, IMC, INET, Internet, ISISHQ, Janet, MCI Mail, MicroLink, NWI, PANDORA, PINET, Portal, Prairie, PsychNet, ScienceNet, SI (Systemas Industriales), TCN, Telecom Gold, Telemail, Telex, TWICS, Tymnet/Ontyme, UNDP;UNDRO;UNINET, UNICOMP UNISON, WELL

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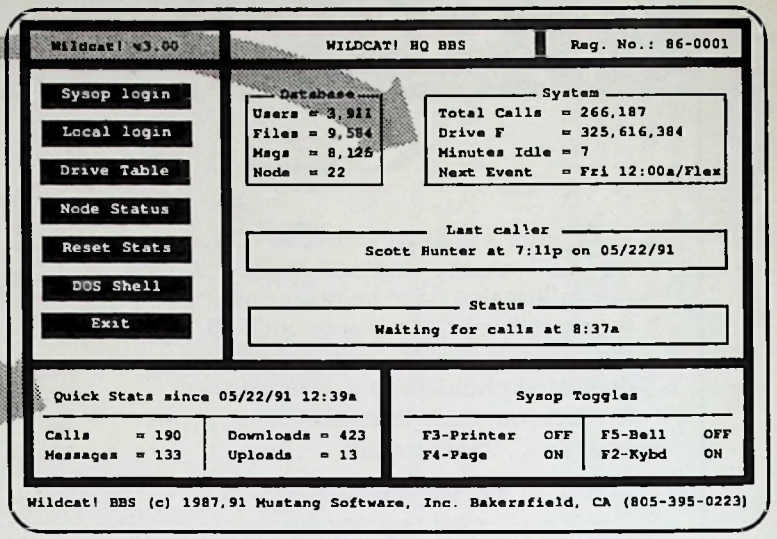
Right From The Start

Information *on your most important system-wide statistics, including users, files, messages, and node ID number. System toggles are also displayed on screen.*

Quick statistics *can be reset from the idle screen here, or from any of the 65,000 events available 24 hours a day. A daily reset keeps the sysop informed.*

Local activity buttons *for login as sysop or user, drive space display, node status for all lines with caller activity information, and access to a DOS shell and menu facility for running other programs. Console activity can be password locked.*

More Information *including total calls, main drive space, how long since the last call and the next pending event.*



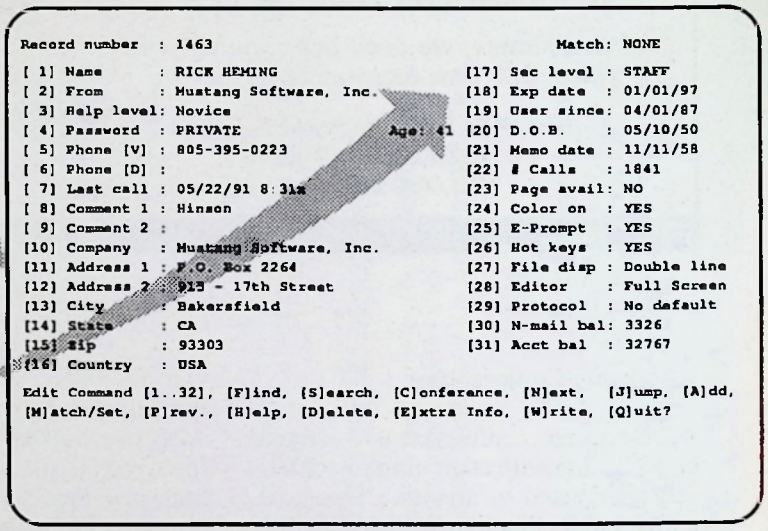
User Maintenance

Multiple access. *This screen can be accessed from the sysop menu (naturally), but also after reading every message to enable editing users sending, receiving, or being discussed in a message. Exiting user maintenance immediately returns to the message you left.*

Full demographic *information including a second screen with an alias name and user-specific conference and file area access overrides.*

Control by conference *(1,000 of them) for co-sysop status, user title, log-on time and more.*

Match by security or expiration date *to view all who meet your criteria, then [W]rite them a message explaining the changes with immediate return to the user record.*



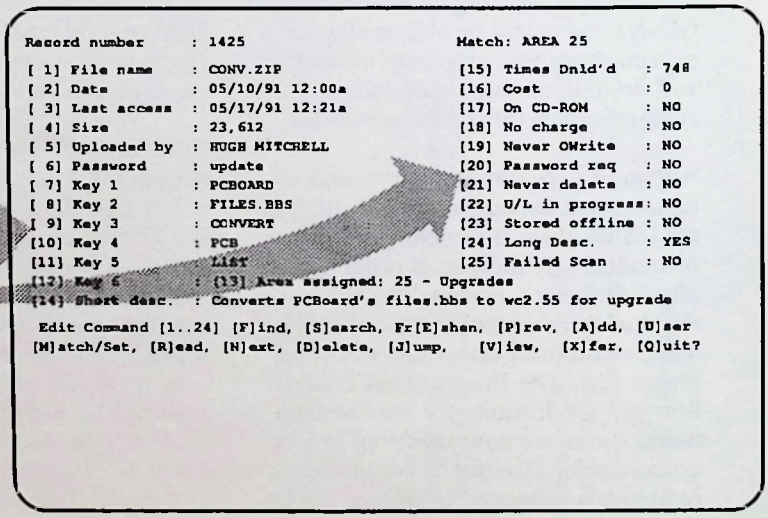
File Maintenance

Database security *Only the files you specify in the B-Tree indexed database can be downloaded, and you can catalogue up to 2 billion files from 1,000 file areas and 4,000 subdirectories.*

6 Keywords *provide fast indexed file searches. They can be entered by the caller, or generated from the description.*

Description text *starts with a brief 65 character field and allows an extended description up to 15 lines of 80 characters.*

Name of uploader. *# of downloads, date of last download, stored on CD ROM or off-line are all tracked for each file.*



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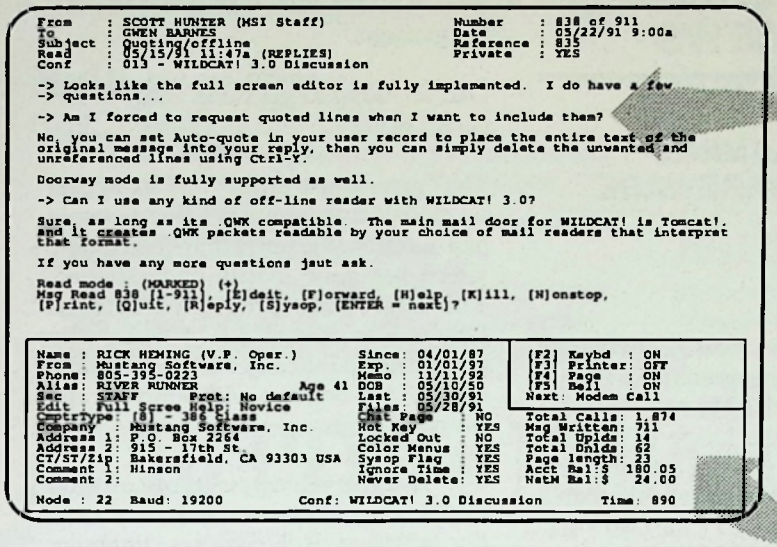


The Big Picture

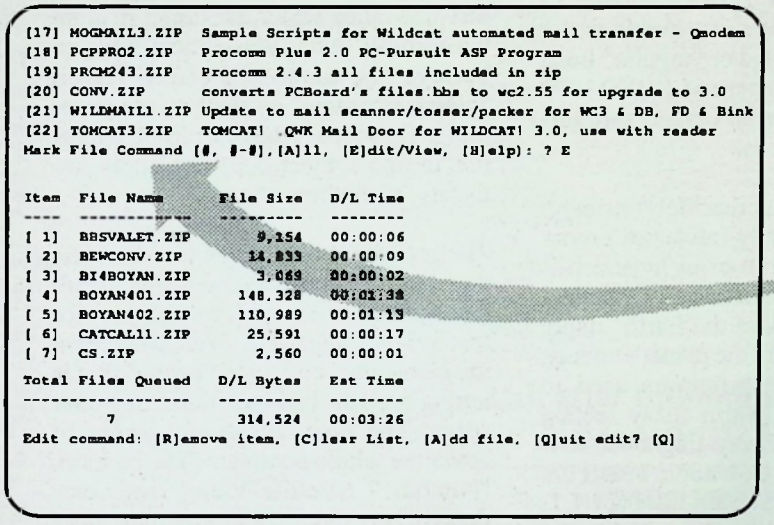
Message quoting *is available either automatically or on a line-by line basis on request.*

Full screen editor *The visual editor includes support for cursor commands, full doorway control including Home, End, PgUp, PgDn, etc., and WordStar commands.*

Net & Echomail messages *can be tossed directly in and out of any WILDCAT! conference with Binkleyterm, D'Bridge or Front Door.*

File attachments *to a message result in an additional command line option to [D]ownload the attachment, with immediate return to the message after completion.*

VGA/EGA resolution *for the sysop allows the local screen to use enhanced display modes to view a complete user record on screen with the active user display above.*

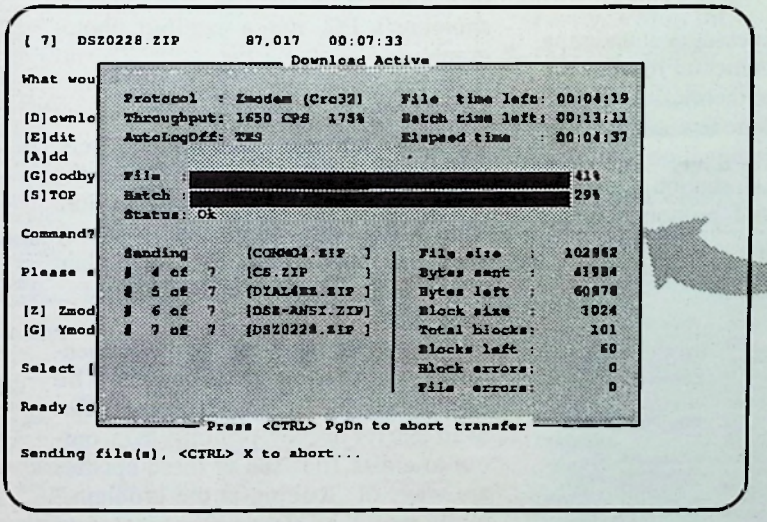


Marking Files

File listings *can be formatted as single line , double line or full file information display. Get full [I]nformation on any file including the extended 15 line description, [V]iew a compressed file, [D]ownload or [M]ark files after each screen display.*

Mark files *by numbers such as 1-5, 7, 9 rather than typing the cryptic filenames. Continue to view the listing until you have marked all desired files, then request a download and preview your marked list.*

File Search *based on name, keyword, uploader or description text also allows file marking of found files for later download.*



File Transfer

Batch downloads *are supported using internal Ymodem, Ymodem-G, Zmodem, and Kermit, and a special batch emulation for sending batches of previously marked files using Xmodem, Xmodem-CRC and 1K-Xmodem. External protocols can be added easily. Ymodem-G reaches 1750+cps!*

Batch uploads *using all internal and external protocols is fully supported with optional virus checking of each file.*

Full status *is displayed on screen including batch and file percentage scroll bars along with other statistics.*

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241-82-55 voice
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PS. You are aware of the hot times we have now in the USSR. According to the las information, the eight Junta member are trying to "bolt" and they are now at Vnukovo airport.

The troops and tanks are being withdrwan from Moscow. This night 2 or 5 persons were killed in an attempt of storming the "White House" (Russian Parliament).

Best regards.

Anatoly Voronov

SHAREWARE REVIEWS

GLOBAL WARMING ACTIVIST SHAREWARE

by David Hakala

I hereby admit to political incorrectness: I am a heel-dragging, grumbling-to-the-garbage-can recycler. My wife drove me to it, abetted by the image of our son when he grows up, gas mask fairly welded to his face as he trots through a greenish miasma to 7-11 for Dad's six-pack. But I DON'T LIKE having to remember (at 6:30 a.m.) if this is the week for color-coded or "regular" trash to be put out. I didn't spend 40,000 1970 dollars on a degree so I could sort garbage.

Thirty years of increasingly strident, one-sided and utterly intolerant propaganda have made all of us hypersensitive to environmental issues. Organizations like "Friends of the Earth" imply that the rest of us are the planet's enemy. Television nature programs used to leave you with a warm fuzzy feeling towards animals. Every single one now concludes "These cute noble beasts are dying and IT'S YOUR FAULT, FILTHY HUMAN!"

The loath-thyself messages inundating us from the environmental mavens are sometimes based on theories asserted as facts, facts twisted into lies, and lies told with the righteous indignation of an altar boy accused of masturbation. Question any of their solemn pronouncements about "the impending global catastrophe" and you will be branded as a reactionary planet killer who refuses to sort his garbage.

OK; anything to get rid of those color-coded bins:

The "greenhouse effect" and its impact on global temperature is a fine example of a questionable "environmental crisis" which has gone mostly unquestioned. The shareware program **STP.EXE** (**"Save The Planet"**) is a technically elegant and politically cunning example of what can be done with statistics and distorted facts.

STP is a marvelous piece of software engineering. Written entirely in assembly language, it is compact, lightning fast and graphically exciting. It is so masterfully done, you almost have to believe the authors are experts on "global warming" as well as programming. Therein lies the first pitfall: expertise in one subject does not imply authority in another.

The program boots up with a dramatic view of the southern hemisphere, all blue-green, white and lovely, except for that angry orange spot over Antarctica: the menacing "hole in the ozone" that is letting in all the bad radiation from outer space. The rusty zit rapidly grows to cover the whole continent. The caption, "Nimbus 7 Satellite View" lends credence to the threat, until you remember this is a graphic display generated on someone's PC, not a satellite photograph.

The main menu offers six selections and a graph of atmospheric chlorine levels, which appear to have doubled over the last ten years to about 4 parts per billion. Evidently we're supposed to worry about that, but the authors never explain why chlorine is their cover-chemical.

The first menu item leads to the "Greenhouse & Ozone Database." The database is just a list of 21 text files available for display, printing, even output to a disk file. Ten of these epistles are ways of "looking at the problem," while the other eleven are devoted to "taking action to solve it." While looking at the problem, remember you are seeing only what the authors intend you to see.

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LOGON PROCEDURE

1. Set your software for 8 Bits, No Parity, 1 Stop Bit.
2. Dial the number nearest you.
3. At the "CONNECT" message slowly type four periods <RETURN>
4. At the "SIGN ON" prompt type: PBLICNET <RETURN>

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Public Data Network

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The opening salvo in this propaganda barrage is a pair of very nicely done graphs comparing "man's production of carbon dioxide" to the slight rise in "5-year average" global temperature during the years 1890 to 1990. It looks obvious to the authors that man has heated up the planet with his indiscriminate burning of fossil fuels and wood.

There's just one problem: CO2 levels have consistently risen AFTER rises in average temperature. One would expect a cause to precede its effect, not follow it.

Computer models are cited as yet another authoritative glimpse into our dire future. There are five supercomputers running five different climatological models in the world. According to STP, they all agree on just one thing: doubling the atmosphere's CO2 load will indeed raise the average global temperature by about 10% to 15% over the next fifty years. Of course, these are the same supercomputers that told you to take an umbrella with you that day you got sunburned. One of them, asked to model the earth's climate given today's real input, said the Sahara was several feet under water.

STP includes its own global-warming simulation game. The user selects the percentage of today's atmospheric CO2 he wants to inject into the atmosphere over the next sixty years, and the program projects the average rise in global temperature at the end of each decade. I ran this thing four times, each time generating six temperature measurements for each of six CO2 levels.

The four sets of data disagreed with each other as to how much temperatures would rise in any given decade for any given level of CO2 production. STP, in other words, perfectly simulates its big-brother supercomputer models. It cannot predict the weather any better than they can.

I found that the program indicated we are better off putting out MORE carbon dioxide -- 110% of the CO2 we currently produce, to be exact. Global temperature rose only 0.6 degrees by the year 2010 under that scenario, while maintaining today's output would raise the temperature by 1.1 degrees during the same time period. If we really start thinking of the long term health of the planet, we should immediately begin putting out 130% of our current CO2 levels. Temperatures would then rise "only" 3.2 degrees by 2050, instead of a full 3.6 degrees if we just keep piddling along as we are doing.

Minor reductions in CO2 output (10% to 20%) yielded lower temperature rises in three out of the four data sets. One set predicted temperatures would rise 2.8 degrees F. by 2050 with a 20% CO2 reduction, but only 2.2 degrees if we just maintain the status quo. A truly herculean reduction of 50% in our CO2 output could keep the temperature increase down to 1.0 to 1.4 degrees at the end of sixty years.

If you're still upset about global warming, STP will help you raise hell about it. The program includes a data file containing the names, titles and addresses of President Bush, all Congressional representatives, and various Cabinet members. It has a simple text editor built right in, so you can pick your targets and fire off some letters. STP even has an environmental activist's style guide. Don't tell your Congressman about your affiliations with environmental groups, for example; he/she already knows where such groups stand.

STP is chock full of helpful tips on recycling, reducing burning and automobile use, environmentally correct packaging, where to spend your time and money every day to save a couple of degrees Fahrenheit by the year 2050. Next time someone dispiritedly sighs to me, "Lord, where does the day go?" I'm going to ask, "Do you sort your garbage?"

STP is available from its authors, Roger & Kathy Cox, on a visually correct forest green diskette of course, or by downloading the file STP210.ZIP from Boardwatch Online Information System. The basic registration fee for individual troublemakers is $16.00 and includes two annual updates. Site licenses for schools and nonprofits cost $8.00 per copy you plan to make, minimum order $80. About the only thing I really like about STP is its price for government agencies: $30 is only fair, since the government will give itself a sizable rebate at tax time. Save The Planet Software: P. O. Box 45, Pitkin CO 81241. Voice: (303)641-5035.

AUTOREAD MAKES HUGE TEXT FILES NAVIGABLE

by David Hakala

We read a lot here at Boardwatch, especially BBS file directory listings, shareware documentation and message log files. You gotta shuck a lot of oysters to find a pearl in the ocean of online text. If we ever printed all this stuff, we'd win a community service award from the Oregon Logging Industry Association and GreenPeace would picket our offices. So we leave most of it on our overburdened hard drives.

Searching large text files using a word processor is a royal pain. WordPerfect typically grinds away for five minutes just loading a one-megabyte message log, and takes equally excruciating time for every search and save operation. Usually we want to look for any of several key phrases, and each keyword list is unique to the document searched. There's no convenient way to save our hit-list so we can quickly look up an obscure function in a software manual, or scan EXEC-PC's latest 50,000-file directory list for phrases like "BBS list," "FREE!!," "TSR coffee-maker," and other items of interest to our readers.

Australia's David Gregg recently and unknowingly came to our rescue with his splendidly designed and immensely powerful AUTOREAD program. This little gem makes short work of searching, indexing and retrieving any items in text files up to 65,536 lines in length. That translates into two or three megabytes of text.

The program scans a text file and creates three kinds of permanent or temporary "landmarks" which are stored in separate index files or RAM. It does not alter the original text file in any way. Once these landmarks are created, locating one and displaying the page on which it appears is instantaneous. Once found, the desired reference and its surrounding text can be dumped to a file or printer.

The FALKEN Mind Meld.

"I was very pleased to learn that all claims were true and to-the-point."

FALKEN 6.0 System Profile: THE FINAL FRONTIER BBS

System:	The Final Frontier	Location:	Hanford, California	Protocol:	8-bits, no parity
Sysop:	"SysOp Robert"	Phone No:	209-584-6417	Hardware:	386 - 25MHz PC
		No./Lines:	8		
		Baud Rate:	300/1200/2400	Software:	*Falken* 6.0

"I've been 'computing' for over 11 years, and since I was bitten by the 'BBS bug', about 7 years ago, I have dabbled, as a member of other small BBS's.

"Once the decision was made to begin my own, I started with a small Commodore, single-line system, and was QUICKLY introduced to the woes and worries of being a SysOp.

"Having a life-long dream to operate a multi-line system, seemed as if it would only remain just that... a dream, since the cost and equipment necessary was astronomical.

"A friend read a small ad that he discovered in the trade mags, about a new, and inexpensive Multi-Line BBS system that was just becoming available, and at a VERY reasonable cost. So, with that in mind, I began to research the cost of obtaining the hardware. Since Falken appeared to be VERY flexible, I was able to begin my new 'multi-line dream' with as few as 2 phone lines, and at a fraction of what I had originally been told the startup costs would be for OTHER multi-line systems.

"Having spent my life strictly as an Apple and Commodore 'computee', I was somewhat reluctant to take such a bold dive into the IBM/clone realm, but decided to take the chance anyway, ESPECIALLY after having spoken to the marketing representative for Falken (Jeffery Coons), and learning the Falken software was straight-forward, and easy to install and configured. So, onward and upward I went...

"I was VERY pleased to learn that all claims were indeed true and to the point. Falken was QUITE EASY to install and setup to any system configuration my heart, (or ego) desired. Having been a loyal Star Trek fan most of my life, the 'Theme' for my BBS is 'The Final Frontier'.

"Falken allowed me to configure my BBS to match and elaborate on my chosen theme. The menus were easy to design, using any of a number of readily available ANSI editors. And custom messages were also a snap to make.

"During my relationship with Falken, I have had no problems obtaining help with problems, be they SysOp related, hardware, or software. (many a time, I have contacted the BBS programmer and discovered that I simply AND'ed when I should have OR'ed, (so to speak). I have always been met with a great deal of patience, and understanding. And have always found them generous with their time and information.

"Now, with the advent of Falken 6.0, I personally know of many, many new 'doors' programs in the works. Which will be SURE to add to Falken's versatility.

"All-in-all, Falken has been a life-long dream come true for me. I've been able to establish a VERY successful BBS, and can rest assured that any and all problems will be quickly and professionally handled."

☐ Falken 6.0 fact sheet.(free)

☐ Falken 6.0 2-line demo ($25)
(check format desired below)
__ 5.25" 360K (4 disks)
__ 5.25" 1.2M (1 disk)
__ 3.5" 720K (2 disks)

☐ Falken 6.0 BBS Software
__ 2-line ($99)
__ 4-line ($199)
__ 8-line ($299)
__ 16-line ($399)

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FALKEN 6.0 Features

- Supports up to 16 lines plus a local login channel.
- Compatible with the FOSSIL standard for interfacing the serial ports.
- Built-in multitasking environment breaks the 640K barrier. *Falken* uses expanded memory so that it will even operate on XT-class PCs.
- Doors which allow external applications to be developed.
- Link teleconferences with other *Falken* systems to create SUPER teleconferences.
- Sysops can dial-out while *Falken* is on-line supporting other users.
- Fully configurable menus to create the desired 'look-and-feel' of the system.
- Customize your menus and screens for both ANSI and ASCII users.
- DOS Shell, written specifically to be used with FOSSIL drivers, can be used either locally or remotely. It can be used to copy, delete, rename, type, dump, list, or locate files.
- Utilities included to automate maintenance, billing, monitoring and other functions.
- E-Mail with distribution lists.
- Attach File to E-Mail to be downloaded when the letter is read by the recipient.
- Message Base uses threaded responses.
- Full Screen Editor uses ANSI codes to manipulate text on the screen.
- Global Commands include: .who, .user, .userlist, .time, .logoff, .send, .kill, .extend (allows a sysop to give a user 10 extra minutes on their session).
- The Ymodem, Zmodem, and Xmodem protocols use the FOSSIL interface to the I/O ports. Source code for all protocols is available.

FALKEN 6.0 Prices

2-Line $99	8-Line $299
4-Line $199	16-Line... $399

Test Drive FALKEN

The 2-line version of *Falken 6.0* is available as Shareware. To download *Falken* or to see the system in action, call our BBS at 703-803-8000 (USR/HST), local access on PCPusuit node DCWAS or Tymnet node 0476.

You can also use the coupon on the left to request more information or order Falken 6.0.

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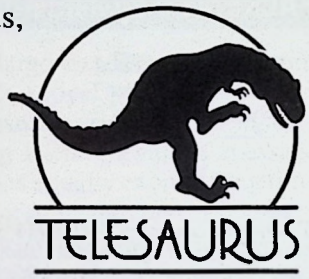

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"Chapter stops" are major landmarks; they provide instant access to up to 500 unique locations in a file. You can set a chapter stop on the fly or have AUTOREAD automatically create chapter stops based on pattern recognition.

Several types of pattern-recognition algorithms are built into AUTOREAD. A "textual make" lets you specify a text string which triggers a chapter stop insertion when found. This algorithm works well only if the text string delimiter is consistently used throughout the file. It would be fine, for instance, when indexing a message log file by "Subject:" headings, or on a shareware manual that consistently starts every chapter or section with the same phrase. It isn't worth a damn on the rambling unformatted diatribe some authors prefer. Gregg included other algorithms for the most common styles used. A "procedural make" is ideal for documents divided in a nested hierarchical outline form. You need only tell AUTOREAD whether the style is alphabetic, i.e.,

A. Overview
  a. Legal Disclaimer
  b. Registration

B. Installation
  a. Floppy Drives
  b. Hard Drives

or numeric, as in "1.0, 1.1, 1.12..." and the program will whiz through the document inserting chapter stops at each outline level.

The least reliable algorithm simply inserts a chapter stop wherever it find a line containing only upper-case characters. The PKZIP manual, for example, separates its sections with lines like "COMMAND LINE OPTIONS." AUTOREAD will automatically insert chapter stops at such points, but you will probably end up with some erroneous "chapters."

We put AUTOREAD to the test by creating a 1.25 MB text file from a database of 1,400 records. The resulting file contained over 45,000 lines and the program indexed all of them in 50 seconds flat. Then we ordered it to insert chapter stops at every line that contained "303-" and watched it create 40 chapters in 92 seconds. Zooming from one chapter stop to the next was instantaneous. The ad hoc Find command located the name "Zuckerbrod" on line 37,709 in 1 minute, 35 seconds. We used an 80386/33 machine for this test, but the file resided on a typical 28 ms hard drive. A RAM drive would yield shorter times.

You can manually add a chapter stop anywhere you like. Simply position the line at which you want to insert a stop at the top of AUTOREAD's display screen, press ESC to display the command menu bar, C for "chapter" and A for "add a stop right here."

The finished index is stored in an external file with the extension .ARI and the filename of the document indexed. This file also contains the one-line description of each chapter stop, which the user can edit to suit his own mnemonic tastes. Thus, "Stuff about Extended Memory" in the chapter stop description might reference a chapter entitled, "XMS vs.

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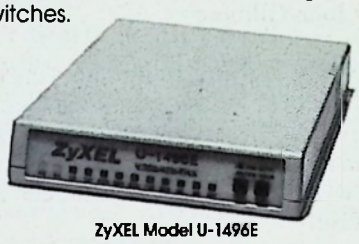

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V.22bis/V.22/BELL 212A at 2.4, 1.2 Kbps	●	●	●
V.21/BELL 103 at 300 bps	▲	▲	▲
V.33 at 14.4, 12.0 Kbps	●		
V.29 at 9.6, 7.2, 4.8 Kbps	●		
V.27ter at 4.8, 2.4 Kbps	●		
G3 FAX	●	●	●
EIA Class 2 FAX Standard	▲	▲	▲
Dynamic Online Fall back/forward	●	●	●
Other Features			
V.42bis/V.42; MNP5/MNP4	●	●	●
Max. Throughput Possible(K); DTE	76.8	57.6	57.6
2-Wire Dial Up and Leased Line	●	●	●
4-Wire Leased and Dial Backup	●		
Line condition monitoring	●		
Read/Write/Reset Remote Configuration	●	●	●
Complete Diagnostic Capability	●	●	●
Synchronous Transmission Capability	●	●	
Password Protection and Call Back	●	●	●
Also Included			
Warranty, Parts and Labor (years)	5	5	5
Money Back (days)	30	30	30
	●	Standard feature	
	▲	Can be upgraded	
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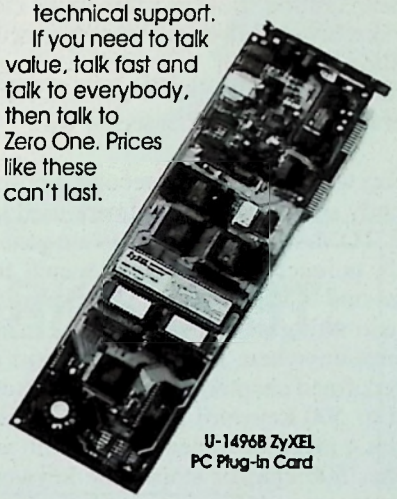

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EMS." We really take advantage of this feature, since we like to think everything we didn't write can be improved.

Gregg kindly included a stand alone utility called CHAPMAKE.EXE which employs user-defined templates to automatically make chapter stops for various types of documents. Once you make chapter stops in one PCBoard message log file, you need never specify the algorithm or text strings for a similar file again. Updating an .ARI file from its template when you receive a new version of a program and its manual is a snap.

Once chapter stops are inserted, zooming around in your text file is fast and simple. Just press F2 and up pops a window listing all the available chapter stops by description. Highlight one and press a key and there you are! The chapter stops can even be sorted in two different ways. Line-number order is logical for many searches; you'll typically want to step through a user manual in linear fashion. But the same index can be displayed in alphabetical order, facilitating look-up of key phrases in any order. You can switch back and forth between the two sort orders at will.

"Keywords" are the second permanently stored type of landmark used by AUTOMAKE. Chapter stops are generally unique; you'll usually search for just one "Chapter XVII." A keyword is a text string that might be found many times anywhere in the file, not just at predefined chapter stops. You can store up to 500 keyword phrases associated with a given document, along with another 500 chapter stops. The keyword option menu lets you control the direction and scope of the search: up or down from the current line number or a top-to-bottom search of the whole document.

The "Find" command works exactly like the keyword functions, but is intended for on-the-fly searches. Just select "Find" and you are prompted for the text string you seek.

"Bookmarks" are temporary stops which vanish when you exit AUTOREAD. There can be only ten bookmarks active at a time. It might be hard to find the one you want; the program displays only the line number marked, with no indication of the text to which it refers.

Gregg provides many user-customizable options; he obviously believes programs should behave as people want them to, not vice versa. Nice touches include dumping a screen full, chapter or range of lines to either printer or file; jumping to specific page numbers in a page-numbered document; color adjustment and the ability to specify where the selected stop point will appear on the screen.

AUTOREAD is not a memory-resident program. But it works well with DOS 5.0's Task Swapper and other task-switcher programs. Load AUTOREAD into high memory and point it at data files on a RAM drive; we'll bet you'll soon be in love with this splendid piece of shareware.

Subscribers to Boardwatch BBS **(303)973-4222** may download **AUTR109.ZIP** to test drive AUTOREAD. The AUTOREAD registration fee is a steal at **$20.00**. If you don't pay it, we sincerely wish perdition upon you. Send **$30.00** and you'll receive the next version when it is released.

The Public Software Library handles all North American registrations of AUTOREAD; call **1-800-2424-PSL** (voice) to register the program using Visa or MasterCard, or write to PSL; PO Box 35707; Houston, TX 77235-5705. Users outside North America should register directly with the author: David R Grigg, 1556 Main Road, Research, Vic 3095, Australia

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PRIVACY AND THE OPEN SOCIETY

by John Gilmore

My talk concerns two ethics - the belief in an open society and the belief in privacy. These two ethics are related, and I would like to say something about how they relate to our conduct in the world.

This society was built as a free and open society. Our ancestors, our parents, our peers, and ourselves are all making and building this society in such a way - because we believe such a society out performs closed societies - in quality of life, in liberty, and in the pursuit of happiness.

But I see this free and open society being nibbled to death by ducks, by small, unheralded changes. It's still legal to exist in our society without an ID - but just barely. It is still legal to exist by paying with cash - just barely. It is still legal to associate with anyone you want - unless they bring a joint onto your boat, photograph naked children for your museum, or work for you building a fantasy role playing game. And I think conferences like ours run the risk of being co-opted; we sit here and we work hard and we talk to people and build our consensus on what are relatively minor points, while we lose the larger open society.

For example: we have the highest percentage in the world of our own population in jail. We used to be number two but last year we passed South Africa. We are number one.

Over the last ten years we've doubled the number of people in jail. In fact, those extra cells are mostly filled with people on drug charges, a victimless crime that twenty years ago was accepted behavior.

But it's no wonder we are concerned about privacy, because we are all "lawbreakers." We all break the law, but few of us are criminals. The problem is that simply attracting the attention of the police is enough to put the best of us at risk, because we break the law all the time and it's set up to make that happen!

I don't blame the cops for this. They mostly just enforce the bad laws that the legislatures write. The legislatures aren't completely at fault either, because in the long run, only educating the whole population about the benefits of openness has a chance. And I think I do a little bit of work in this area.

But beyond that, as P.T. Barnum said, "Nobody ever lost money by underestimating the intelligence of the American public." Where I hold out the most hope is in a different approach. In the paraphrased words of Ted Nelson, we probably can't stop this elephant, but maybe we can run between its legs.

In most of Europe, phone companies don't record the phone numbers when you call, and they don't show up on your bill. They only tick off the charges on a meter. Now, I was told that this is partly because the Nazis used the call records that they used to have, to track and identify the opposition after taking over those countries in World War II. They don't keep those records any more.

In the U.S., people boycotted the 1990 census in record numbers. I think that the most shameful story of how Japanese-Americans were rounded up using census data had a lot to do with that.

Professor Tribe talked about the distrust we must hold for our government. We have to realize that people who run the government can and do change. Our society and laws must assume that bad people - criminals even - will run the government, at least part of the time.

There's been a lot of talk here about privacy - but we haven't focused much on why we want it. Privacy is a means; what is the real end we are looking for here? I submit that we're looking for increased tolerance.

Society tolerates all different kinds of behavior - differences in religion, differences in political opinions, races, etc. But if your differences aren't accepted by the government or by other parts of society, you can still be tolerated if they simply don't know that you are different. Even a repressive government or a regressive individual can't persecute you if you look the same as everybody else. And, as George Perry said today, "Diversity is the comparative advantage of American society." I think that's what privacy is really protecting.

The whole conference has spent a lot of time talking about ways to control uses of information and to protect peoples' privacy after the information was collected. But that only works if you as-

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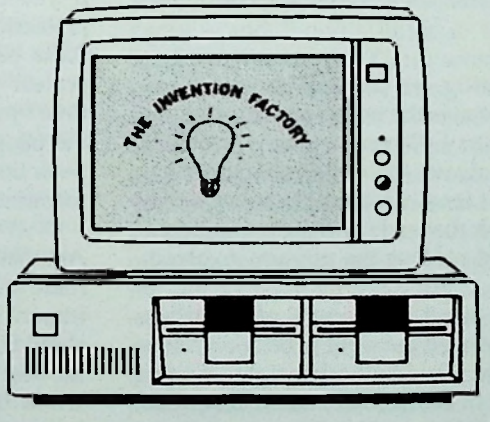


TO BROWSE THE SYSTEM AND REGISTER ON-LINE CALL 212-431-1194.

sume a good government. If we get one seriously bad government, they'll have all the information they need to make an efficient police state and make it the last government. It's more than convenient for them - in fact, it's a temptation for people who want to do that, to try to get into power and do it. Because we are giving them the means.

What if we could build a society where the information was never collected? Where you could pay to rent a video without leaving a credit card number or a bank number? Where you could prove you're certified to drive without ever giving your name? Where you could send and receive messages without revealing your physical location, like an electronic post office box?

That's the kind of society I want to build. I want a guarantee - with physics and mathematics, not with laws - that we can give ourselves things like real privacy of personal communications. Encryption strong enough that even the NSA can't break it. We already know how. But we're not applying it. We also need better protocols for mobile communication that can't be tracked.

We also want real privacy of personal records. Our computers are extensions of our minds. We should build them so that a thought written in the computer is as private as a thought held in our minds.

We should have real freedom of trade. We must be free to sell what we make and buy what we want - from anyone and to anyone - to support ourselves and accomplish what we need to do in this world.

Importantly, we need real financial privacy because the goods and information cost money. When you buy or sell or communicate, money is going to change hands. If they can track the money, they can track the trade and the communication, and we lose the privacy involved.

We also need real control of identification. We need the right to be anonymous while exercising all other rights. So that even with our photos, our fingerprints, and our DNA profile, they can't link our communication and trade and financial activities to our person.

Now I'm not talking about lack of accountability here, at all. We must be accountable to the people we communicate with. We must be accountable to the people we trade with. And the technology must be built to enforce that. But we must not be accountable to THE PUBLIC for who we talk to, or who we buy and sell from.

There's plenty of problems here. I think we need to work on them. Just laws need to be enforced in such a society. People need to find like-minded people. And somebody still has to pay the cost of government, even when they can't spy on our income and our purchases. I don't know how to solve these problems, but I'm not willing to throw the baby out with the bath water. I still think that we should shoot for real privacy and look for solutions to these problems.

How do we create this kind of society? One way is to stop building and supporting fake protections, like laws that say you can't listen to cellular phone calls. We should definitely stop building outright threatening systems like the Thai ID system or the CalTrans vehicle tracking system.

Another thing to do is, if you know how, start and continue building real protections in the things you build. Build for the US market even if the NSA continues to suppress privacy with export controls on cryptography. It costs more to build two versions, one for us and one for export, but it's your society you're building for, and I think you should build for the way you want to live.

If you don't know how to build real protection, buy it. Make a market for those people who are building it, and protect your own privacy at the same time by putting it to use. Demand it from the people who supply you, like computer companies and cellular telephone manufacturers.

Another thing is to work to eliminate trade restrictions. We should be able to import the best from everywhere and we should be able to export the privacy and the best of our products to the rest of the world. The NSA is currently holding us hostage; Mainframe manufacturers, for example, haven't built in security because they can't export it. IBM put DES into their whole new line of computers, and they were only going to put it on the U.S. models, but the NSA threatened to persecute them by stalling even their allowable exports in red tape. IBM backed down and took it out. We can't allow this to continue.

We also need to educate everyone about what's possible so we can choose this kind of freedom rather than assume it's unattainable.

None of these ideas are new. Freedom of association and privacy have been prized by people everywhere. Cryptography has been used for these goals for thousands of years. But we owe a special debt to cryptographer David Chaum for researching how modern cryptography can enable these goals to be met by everyone in society, on a large scale. By reading David's work, you can begin to understand the capabilities of cryptography and how to apply them to provide financial and personal privacy.

We need to keep cash and anonymity legal. We'll need them as precedents for untraceable electronic cash and cryptographic anonymity.

I think with these approaches, we'll do a lot more for our REAL freedom, our real privacy, and our real security, than passing a few more laws or scaring a few more kid crackers. Please join me in building a future we'll be proud to inhabit and happy to leave to our children.

[This article was a transcript of remarks presented by John Gilmore, member of the Board of the Electronic Frontier Foundation, at the First Conference on Computers, Freedom, and Privacy held in San Francisco, March 18, 1991. Mr. Gilmore can be reached via Internet at gnu@toad.com - Editor]

Bernie Richards with Heart Beats Callers

DIRECT DIAL

A HEART STILL BEATS IN PORTLAND

Bulletin Boards play a pretty large role in Bernie Richard's life. In March of 1989, Richards first dialed into a BBS in Portland titled HEART BEATS - a multiline social chat system using DLX software. A Junior at Portland State University, Richards was captivated by the social interaction - so much so that when the owners announced in September 1989 that they were going to sell it, he pulled a Victor Kiam and bought it. He dropped out of school and spent his time on the system constantly to improve it.

The system sported four telephone lines and an XT class computer with a 40 MB drive. In the two years since, Richards has expanded the system to 12 telephone lines and a 33 MHz 80486 system with 209 MB of storage. A Microcom rackmount supplies 7 of the modems with USR and Hayes modems making up the rest.

A young lady who relocated from Florida to Portland and began frequenting the board came to play a large role on Heart Beats as well as with Bernie Richards. She still spends a lot of time there under the alias of Kylonia. Kylonia and "Cuda", the alias Richards uses on his system, hit it off so well they decided to set up housekeeping together in the real world. Today they live together and run the system together and Kylonia is one of the more popular "chats" on the board.

Tim Brodhacker's wife actually became involved with the system first. But after spending a bit of time on it, Brodhacker adopted the alias Broad Hacker and also pitched in to help with some of the physical work of running the system and doing some of the C language programming needed to bring Heart Beats into the INFOTRAN network - an international network of DLX systems that share messages.

Heart Beats is probably one of the friendliest and most active chat systems in the Northwest. The twelve lines are generally fully loaded. Each caller gets 45 minutes before being "dumped" by the system to let someone else in. After you are dumped, you can call back in almost immediately for another 45 minutes, but on twelve lines, the net effect is one of people coming and going almost constantly in a weird kind of online social carousel. As a result, the system is not constantly locked up with "campers" - those who dial into a system and stay on for four hours at a time. People come and go with ease.

The system has become quite a social club and the 200-odd paid members are quite loyal. Subscription rates vary with the calendar period but a six-month subscription is $35 - quite reasonable for chat service. Richards receives a little over $600 monthly from subscribers at this point - which puts it in the black. This is somewhat remarkable in that Heart Beats does not yet accept Master Card or Visa - you must actually mail them a check. It's all the more remarkable in that while we couldn't do much on the system before becoming a member, we also played a royal Easter egg hunt to find the membership information on the system. That Heart Beats is modestly economically self-sufficient despite these rather glaring procedural shortcomings is a tribute to the attraction it holds for those calling it.

One of the primary features of DLX BBS software, aside from an easy to use multiline interface most suited to such social chat systems, is an extensive logon questionnaire. All BBS require some information from new callers, but DLX takes this to such comical extremes we have to wonder how anyone gets to the main menu at all. Most such systems typically ask 50 questions before allowing you access - some of them essay - and I don't think it actually grades on the curve. Those sensitive to privacy issues will not likely be comfortable. Be prepared to describe your tastes in movies, books, and television as well as a detailed questionnaire on your physical characteristics and sexual proclivities. Reading over my shoulder, my wife found out several things about me she 1) wasn't previously aware of and 2) did not find particularly appealing. Were I forced to answer such a questionnaire prior to our wedding, it probably wouldn't have happened. The upside is that you can view another caller's "bio" and find out quite a bit

more about them than on most BBS - giving the perception of a clearer more human picture of the other callers.

Monthly Heart Beats face-to-face gatherings regularly turn out a quarter of the membership and their last one had over 70 people in attendance. One couple who met on the system, and subsequently at a gathering, plan to marry in May 1992. The system sports some 35 message areas including one for MEN ONLY and another for WOMEN ONLY as well as mixed areas - some of adult nature. Additionally, the chat areas are broken into various "places" such as the Jacuzzi and the Oasis. It's a bit like moving about a country club, chatting or messaging with whoever is there or has been there.

Richards voice-verifies each of his users and is quite strict about males being males and females being females. He notes that about **25%** of the user log is made up of female callers but they log nearly **40%** of the online time.

We found this most interesting for a couple of reasons. First, on many systems the caller ratio is predominantly male to the point of being ridiculously one-sided. For a chat system, female participation certainly elevates the potential for success. But secondly, we've encountered a phenomenon we don't quite know how to statistically define. It revolves around online cross-dressing and it appears to be both pronounced and perplexing.

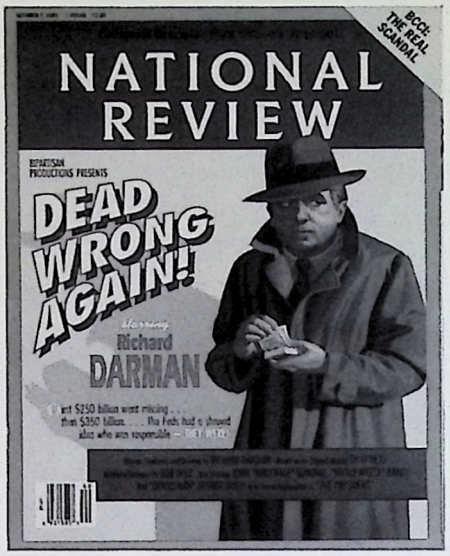
For many women, Clarence Thomas would be a bush leaguer compared to the abuse received online on male-dominated services. Anita Hill never had it so good. In the vernacular, this is known as being "hit on" and I can imagine it might be unnerving to have a discussion on C language programming interrupted by some cretin cro-magnon keyboard cowboy who suggests he suck your toes electronically - and that's some of the milder stuff that goes on apparently.

The online virtual reality is unique in that there are few clues to your real identity other than your name. And in our society, names tend to be reasonably good indicators of gender. So, many women have begun assuming male personnas online. A Judy Fleming could become a J. Fleming, Jim Fleming, or even Bubba Mack with little apparent harm and participate quite fully online with virtually no one knowing they wore a dress to do it. The element of being "hit on" goes away completely (who would want to suck Bubba's toes - even electronically?) and they are treated as equals online. We've spoken with over 40 female online participants in recent months who all successfully employ this ruse to make their lives a little more pleasant on BBS systems. We don't know quite how to statistically define how common it really is, but once you bring the subject up, they seem to come out of the woodwork.

In effect, the online world appears far more male dominated than it actually is. A significant percentage of women online appear to be men. So the next time you're cracking a joke with the "guys" online, note that some percentage of them are probably not guys. On Richards system, this isn't allowed and so the true percentages are perhaps somewhat more apparent. On the other hand, since there are a high percentage of women on his system, any particular woman is not going it alone - there is a certain amount of peer pressure from the other gals to keep people in line. This may make the system more attractive to women in general - there's safety in numbers.

The relative anonymity of the online world does not revolve solely around the issues of sexual identity. If you call Heart Beats and happen to chat with Cuda, his typing might seem a bit slow for a guy who is a full time system operator. But take a powder and relax. In July of 1980, Bernie Richards took a long dive off a short rock on the Gladstone River - breaking his neck quite adequately to confine him to life in a wheelchair - a quadraplegic. He has to type with his mouth - between the muscle spasms that occasionally rack his body. But rather than give in to the isolation of the same four walls and the victim despair so popular among many of the disabled, Bernie Richards hosts a twelve-line electronic party each evening....for his friends.....on Heart Beats. Heart Beats BBS, PO Box 86737, Portland, OR 97286; **(503)239-4510** voice; **(503)236-4945** BBS.

NATIONAL REVIEW MAGAZINE TOWN HALL BBS



William F. Buckley has carried the Republican Conservative flag for a number of years and is widely regarded as one of the most erudite word smiths in the business. He published a magazine titled ***National Review*** carrying conservative comment on politics, the economy, and Washington D.C. Mr. Buckley no longer serves as publisher but still contributes articles and helps promote the magazine.

National Review has introduced an electronic bulletin board service titled **TOWN HALL** - a 24 hour Conservatives-only meeting place. The Unix-like service is priced at **$20** monthly for 12 hours non-prime access (7PM-7AM), with a **$20** sign up fee. Usage beyond the 12 hours is priced at **$4** hourly non-prime time and **$16** hourly prime.

A free "tour" demonstration system is available at **800-648-6964**. You're not actually allowed access to anything substantive, but the main menu is simulated with brief descriptions of what each menu element would present, if you were a member.

The system appears to be a rather powerful Unix system with ties into the Internet. The Post Office, for example, allows global e-mail, fax, telex, and language translation services. The Library

provides access to Dialog - a commercial online service with some 250 databases. The News Desk provides access to weather, sports, horoscopes, and movie reviews.

The service sports its own daily news titled ***Washington Wire*** with daily news on political, cultural, and economic news from our nation's capitol. A Conservative Calendar function lists GOP meetings, caucuses, and primaries scheduled during the coming year with an impressive list of nearly 200 events geographically spanning the nation.

The National Review Online function provides editorial content from the magazine in electronic format - released when the magazine is sent to print. In this sense, it is appropriately more available earlier in electronic form than through the slower printed media. We found it further charming that you can request selected articles for fax delivery.

A voting booth function allows callers to participate in polls on various political topics. Directories of members, groups, and clubs are available. And message areas allow Unix-style conferencing on a variety of topics. The Conference Center allows online interactive chat and various discussions are scheduled. The promoters claim that William F. Buckley himself will sit in on some of these real time chats. Buckley actually is quite familiar with the technology and came out as a booster of word processors and spelling checkers seven or eight years ago after taking command of his own Kaypro computer.

Another Buckley element we find engaging is the WFB Word of the Day. This is a simple vocabulary exercise taking a single word and providing a definition and usage example. But we predict it will be popular, and none more qualified to deliver it.

While we generally laud the advantages of marrying the online and print technologies, most efforts we've seen by large publishers have been a bit limp - with perhaps a couple of notable exceptions. National Review by contrast has created a strikingly powerful online service of impressive scope and very nicely tuned to both their editorial content and conservative agenda. Looks a bit pricey though. National Review Magazine, 150 East 35th Street, New York, NY 10016.

WINDOWS ONLINE BBS

by David Hakala

Windows 3.0 is a strange beast, one people love to hate. It's a monumental piece of programming, yet seems unfinished in many ways. Users are often frustrated by minor omissions, design decisions that don't accommodate their needs, and at times glacial performance. At the same time, task switching, memory management, and a visual interface are powerful attractions. Many have discovered and shared undocumented tricks to fill in the blanks. A lot of Windows shareware utilities, programs, and text files are appearing online. Windows has created a whole new genre in BBSland.

Frank Mahaney and company are doing a fine job of collecting, sifting and organizing this wave of "Windows stuff" with their **Windows Online(tm) Information Database Service** at **(510)736-8343**. Based in Danville California, WOL is a 9-line PCBoard system running CompuCom 9600 bps Speedmodems and 14,400 bps US Robotics Dual Standards. The high-speed modems make the BBS especially attractive to seekers of Windows shareware, which tend to run a bit fat in the file size. Even the archived directory of files we downloaded was over 500 KB in girth. Extracted from its compressed **.ZIP** file, the list is over **1.7** Megabytes.

The list is long partly because WOL puts a lot of valuable detail into each program description. We found descriptions up to 15 lines long, including the latest date of the files in many archives. That feature can save a lot of long-distance money by helping you determine if you already have a later version of a program. WOL also uses this feature to keep its file library fresh and free of duplicates, another thoughtful touch for users and a space-saver for the sysops.

The file directories include more than just **1,300** Windows related files. We found some choice tidbits in just about every area, including: a list of OS/2-oriented BBS; reports on the FBI's efforts to automate and network fingerprinting activity; the latest versions of THEDRAW and Graphics Workshop; and scads of electronic newsletters brimming with juicy gossip. There's something for everyone here, and it's all fresh and clean.

WOL is also in the electronic publishing business. A half-dozen journalists contribute reviews and news to the system about Windows developments, shareware and rumors. These items are updated every day and displayed as a caller logs on. A great service for Windows fans! WOL also offers current and back issues of the Z*NET Online Magazine, a new kid on the block.

There are 78 message areas on WOL and they are very actively patronized. Topics include Windows of course, but there are message areas for OS/2 users, consultants, database users, telecommunicators, artists, musicians, sports fans (even auto-racing), cooks and crooks -- I mean, "cooks and lawyers." The new PCBoard software allows callers to select conferences, archive all new messages and download today's mail in three keystrokes.

Technically, WOL sports nine nodes supported by a 486/25 file server and a 386/33 server, UltraStor 12F 32KB cache controllers, and over 1.2 Gigabytes of 16 ms hard drives. Everything is LANed together with a LANtastic NOS v4.0 Network. We found the system very fast while searching that enormous file directory.

First-time callers must register to do much on WOL. Non-paying registered callers can read the news and message bases, write messages and download files from just one of the 78 directories. If you upload a few files which meet WOL's high standards of currency and taste (no X-rated GIFs, nothing older than 1990), you can download a few of your choice. Non-paying callers are restricted to the first six lines.

Membership has its privileges, in this case more time and less responsibility. Six-month memberships (**$45**) come with 60 minutes per day and up to 300 downloaded files. One-year memberships (**$79**) offer 70 minutes per day and

700 downloaded files per year. WOL accepts online payment by Visa or MasterCard.

WOL is an ambitious enterprise. Employing professional writers to keep members abreast of current events in the Windows world is a unique and valuable twist. The scope, currency and quality of its shareware libraries is outstanding. This system will do very well. Windows Online(tm), data: **(510)736-8343.** P.O. Box 1614, Danville CA 94526-6614.

TELECOM AND THE ENVIRONMENT

by J. Scott Christianson
and Dan Wendling

Concern for our natural environment has increased during the past several years, especially as witnessed by citizen involvement in the last two Earth Day celebrations. The simultaneous appearance of more online resources devoted to the subject of conservation has provided both the experienced online enthusiast and the conservation professional with efficient new tools for spreading and collecting environmental information. These tools include FidoNet and RelayNet echoes that can potentially reach thousands of people, Internet "lists," and BBS with "doors" that callers can use to search databases for a wide variety of technical information.

While it's still true that "all politics is local," if we're going to stick with the belief that environmentalism is centered around community action, we're going to have to change our definition of what a community is. J.C.R. Licklider was at the Massachusetts Institute of Technology in the late 60s developing ARPANET, one of the first packet-switched networks. He called his vision of what online communication would become the "virtual community;" a community made up of people who work alone or in small groups, who are geographically separated, but share the same interests. As he imagined, the people you interact with online are selected by your goals, not your physical proximity to them.

With environmental computing there may be two communities involved, the virtual community where people gather information, and the traditional local community, where the information is used. For instance, in a discussion on the RelayNet (RIME) conference Outdoors, a person in Maryland was talking to a person in California about what to carry in a backpack during a desert outing. These interactions between members of this virtual community might seem insignificant. However, when we consider the power of the traditional community in solving environmental problems, and then look at the information available online for these solutions, the potential of a global virtual community working toward a harmonious relationship with nature is awe inspiring.

Our society will eventually become sustainable, either by a catastrophic crash as increased growth totally outstrips our natural resources or through voluntarily action before such an event occurs. If we attempt to transform our society, we must appraise the role of computers in a sustainable society. Lester Brown, President of the World Watch Institute, states "Energy constraints are likely to push societies toward more compact communities, where work and shopping are often within easy walking distance." Online communications will help ease the transition from a highly centralized society by allowing more people to use their computer and modem to work and shop at home.

Thinking globally is an idea that is not new to online users, and when armed with good information they can make a forceful impact. In Missouri, a chapter of the Izaak Walton League of America was created by several BBS buddies and the sysop of the local (now defunct) Forum-80 BBS. The callers who helped to organize the chapter ranged in profession from wildlife graduate students, business men, psychologists, and high school students. This organization later helped to establish a citizen action program called the Missouri Stream Team, which now has over 7000 participants working to clean up Missouri's waterways.

Electronic media has a unique ability to bring together conservation professionals and those who want to start doing right by mother earth. One lengthy message thread on the Environment BBS began with remarks expressing that the EPA's lawyers are a hindrance to the agency's ability to function effectively. However, the discussion ended with comments from an EPA lawyer about how the EPA is organized and how politics and the law influence the workings of such a large agency. This type of interaction can educate the new and eager environmentalist to the political and social realities of today's environmental problems.

Electronic communication in itself may play a role in reducing waste. Environmental groups and agencies now recommend using electronic mail and bulletin boards as a way to reduce paper waste. This can obviously reduce paper consumption, provided that every message isn't printed out (one weeks' worth of RelayNet's Outdoors conference can run 50 pages!). This article was submitted electronically; now many non-computer oriented magazines accept articles on disk. The National Science Foundation is experimenting with modem communication. Using a program called PC-Express, NSF is accepting grant proposals electronically. These proposals are usually 25-80 pages long and anywhere from five to thirty copies must be submitted. (Incidentally, the NSF is one of the principal funders of the existing Internet and potentially of the proposed high-speed computer network, the National Research and Education Network (NREN).)

ELECTRONIC BULLETIN BOARDS

The grassroots origins of both BBS and much of the environmental movement make nature-oriented boards very active. Besides creating active message bases, users of environmental boards are active uploaders as well. Callers use the boards as information dissemination channels and upload press releases, nature images, articles about their latest camping trip, ways to better practice the 3 R's (Reducing, Reusing, and Recycling) and many other valuable resources.

LIST OF ECOLOGY/CONSERVATION BULLETIN BOARDS

TITLE	TELEPHONE	SUBJECT
Science Resources Studies BBS	202-634-1764	National Science Foundation resources
BioTron	202-628-2427	Run by the American Foundation for Biological Science
The Helix	206-782-3365	Alternative energy; gardening
Green Connection	213-372-0987	Southern California action conferences
BIOSIS Taxononmic Reference File	215-972-6759	Bacterial genetics databases
HerpNet	215-464-3562	Reptiles and amphibians.
The Osprey's Nest	301-989-9036	For "birders, naturalists, and conservationists"
National Agricultural Library	301-344-8511	Agricultural Library Forum (ALF)
The Shore	301-476-5098	Ecotopics Conference
EPA CLU-IN (Clean Up Information)	301-589-8366	Air, ground-water and Superfund SIGs
COGSNet	301-740-9493	Earth science
AgBBS	314-882-8289	Agricultural information
The Ozone Hole	504-895-9049	RelayNet conferences (Ecology, Outdoors, Biology)
EarthNet	516-321-4893	12 message area related to the environ.
Environment BBS	703-524-1837	Message and files areas for enviro. information
HortLine	703-836-2418	Horticultural Science BBS
US Geo Survey	703-648-4168	Maps and mapping programs
PIES	703-506-1025	Pollution Prevention Information Exchange System
Skyland BBS	704-254-7800	Solar energy, outdoor photo. and earth conferences
Sonoma Online	707-545-0746	Several good message areas related to environ.
HMIX	708-972-3275	Hazardous Material Information Exchange
TAXACOM	716-896-7581	Plant Taxonomy; Flora Online newsletter
Florida Fishline	904-488-3773	Fresh and salt water fishing in Florida
EPA Office of Air Quality BBS	919-541-5742	See September '91 issue of Boardwatch for details

One of the most important functions of online services is reaching those who are just developing an environmental awareness. One user of the Skyland BBS states, "When I first heard about the Earth conference, I figured it was nothing but a bunch of half-crazed, deranged hippies looking for something to bitch about. I now see it as a source of information." Conference discussions can also help people gain a positive perspective about helping the environment. This is often hard to do when confronted with ecological tragedies that make the most experienced conservationist want to kill something. One BBS caller offered this, "I would like to do more in the line of positive alternative creation.... if we could start helping each other do things like recycle, grow organic gardens, work closer to where we live, and use biodegradable products, then we could move on to building a sustainable world in keeping with our niche as inhabitants of the planet, exploring new technologies to do things like reduce the amount of damage caused by our need for private transportation, housing, and communications, etc."

You will find that all of the six FidoNet echoes that relate to the environment (**ECOLOGY**, **ECONET**, **ENVIRO**, **ENVIRON**, **FISHING**, **HOMEPOWR** and **SUST_AG**) are usually very active and informative, as are RIME's (RelayNet's) Outdoors, Biology and Ecology conferences. A new conference being considered is an Eco-Action conference, contrasting with the Ecology conference in that it would be more geared toward activism.

Another way to use the information on these BBS is as information sources in writing an informed and up-to-date letter to your congressman on issues that change almost daily. Writing a letter is more effective than most people think. It's true that most of the letters addressed to a congressman are not often read by her or him; opinions are tallied by aides and a form letter is sent back. However, the statistics that are compiled from these letters are weighted before they reach the congressman. For example, every letter that is written favoring one side of an issue might be said to represent the opinions of 300 people, i.e. 10 letters=3000 people of that opinion. Why? Because people who care about an issue will not always care enough to write their opinions down. Legislative alerts from such strong lobbying forces as The Sierra Club and Green Peace are easily found on most environmental boards.

Not all of the articles and press releases are concerned with citizen lobbying. Many concentrate on general ecology

INTERNET/BITNET MAILING LISTS RELATING TO CONSERVATION/ECOLOGY

List Name	Send Subscribe request to: (Internet/Bitnet)	
BIOSPH-L	LISTSERV%UBVM.BITNET@VM1.NODAK.EDU	LISTSERV@UBVM
BIRDCNTR	LISTSERV%ARIZVM1.BITNET@CORNELLC.CIT.CORNELL.EDU	LISTSERV@ARIZVM1
BIRDWEST	LISTSERV%ARIZVM1.BITNET@CORNELLC.CIT.CORNELL.EDU	LISTSERV@ARIZVM1
BIRDEAST	LISTSERV%ARIZVM1.BITNET@CORNELLC.CIT.CORNELL.EDU	LISTSERV@ARIZVM1
BIRDCHAT	LISTSERV%ARIZVM1.BITNET@CORNELLC.CIT.CORNELL.EDU	LISTSERV@ARIZVM1
CONSLINK	none	LISTSERV@SIVM
ETHOLOGY	LISTSERV%FINHUTC.BITNET@CUNYVM.CUNY.EDU	LISTSERV@FINHUTC
GREEN	LISTSERV@INDYCMS.IUPUI.EDU	LISTSERV@INDYCMS

and natural history. The Helix BBS is a great source of informative text files. On the Helix callers find a multitude of files with subjects like how to make good compost, Eco-Feminism, and the problems of nuclear chemicals. Scott Parks, sysop of Helix, says that most of the files he offers "are fairly new but seem to be getting used somewhat more than I expected." Scott also offers online versions of ***Home Power Magazine***, complete with Macintosh graphics files!

For newspaper or newsletter editors, online press releases can be great "canned" articles, complete with contact persons and references. One press release from The Friends of the Earth contained a one page article and two pages of notes and references for editors.

The Helix BBS, and other BBS with alternative energy files and conferences, can provide you with information on how to make a very dramatic change in your life - taking your home off-the-grid (no outside power). Besides having a feeling of self-empowerment, people living off-the-grid actually get their power more economically, although the initial investment is higher. The most common way to generate one's own power is with photovoltaic cells that convert the sun's energy into electricity, which is then stored in large batteries. However, if there is not enough sunlight to generate all of your power needs, a wind generator or hydroelectric system can be used (or a combination of the above).

One of the best BBS we encountered was **EarthNET** which has over 18 message areas (including FidoNet, Internet and Usenet conferences) related to the environment. **EarthNET** also offers many informational text files and an area for nature GIF Files.

The Osprey's Nest (TON) has been offering information to bird watchers for over four years. The message areas include discussions on birding, the use of computers in birding and mineralogy; the file areas contain files on conservation, nature graphics, birding interest groups and many other subjects relating to nature and the environment.

The Ozone Hole, based in New Orleans, Louisiana, carries RelayNet's conferences and has discussion and files concerning the environment in general and that of the New Orleans area as well. Now that sysop Michael Mathews has optical character recognition capabilities (and copyright permission, of course), the board will begin featuring information from Environmental Science and Technology, a Journal of the American Chemical Society.

Several boards are tailored to a more scientifically oriented audience. **The Taxacom BBS** is run by the Buffalo Museum of Science and offers databases and message areas to people interested in botanical systematics (naming plants). Besides a conference on the environment they offer conferences on paleontology, ornithology, phylogenetics, mycology and nomenclature. HerpNet is another good BBS filled with biological information about amphibians and reptiles.

On the **BIOSIS BBS** several databases on the genetics of bacteria can be searched. These BBS with a science emphasis offer free or low cost public access to the same technical information on the ecology of various organisms available from relatively pricey commercial database vendors such as DIALOG Information Services.

Several government-run BBS provide information and support to government employees, but will also allow restricted public access. The **Hazardous Materials Information Exchange (HMIX) BBS** is run jointly by the Federal Emergency Management Agency and the Department of Transportation. HMIX provides information on how to deal with a spill of toxic chemicals, current rules and regulations, and announcements of meetings. **The EPA CLU-IN** (CLean-Up INformation) board dispenses information about the superfund program and the disposing of hazardous waste. The EPA also runs the **Pollution Prevention Information Exchange Sys-**

tem (PIES) which provides a forum for discussing how to prevent pollution. All of these boards offer a way to check out what professionals in the field are doing and can help you understand the work behind the issues of toxic waste management.

BITNET MAILING LISTS

Mailing Lists are the Bitnet equivalent of BBS echos and are distributed by a computer called a **Listserver** (analogous to a FidoNet Hub) to subscribers of the list. Any person with access to Bitnet or Internet can contribute to, and receive a list. To subscribe to a list, you need to send the command **SUB (listname) (your full name)** to the appropriate listserver (see accompanying table). Send this command as the first line of a message from Internet or as the direct object of a tell command from Bitnet. You may have to ask your local Internet guru about the exact syntax for your particular network. After successfully sending the subscribe command, you should receive an acknowledgement that will include information on requesting old copies of the lists and how to "unsubscribe" from the list.

Be forewarned. Don't just subscribe to all the lists at once; your electronic mailbox will be stuffed full. Being a global "public access channel," a list fluctuates in quality and quantity of messages. However, most lists are kept on track by a moderator.

The **BIOSPH-L** list, moderated by Dave Phillips, is concerned with "Anything relating to the biosphere, pollution, CO-2 effect, ecology, habitats, climate, etc., ... Basically anything that exerts an influence of some kind or another on the BioSphere." BIOSPH-L is the best list we found, averaging about four good messages a day. Its' activity reflects the enthusiasm of BIOSPH-L's subscribers. Besides an active discussion, several users upload press releases and articles.

CONSLINK is the "Bitnet Based Electronic Conference and Bulletin Board on all Topics of Biology Conservation" supported by the Smithsonian Institution and moderated by Michael Stuewe. Besides being a discussion list, CONSLINK offers issues of the Biological Conservation Newsletter, edited by Jane Villa-Lobos, and a Register of Biological Fieldstations in Tropical Countries, compiled by Chris Wemmer. Both the newsletter and the register are available from the Listserver. SEND the command INDEX CONSLINK to the Listserver to get a detailed listing of all the files available from CONSLINK.

Bitnet also provides a great medium for bird watchers. There are three lists that correspond to different area of the United States - **BIRDEAST, BIRDCNTR** and **BIRDWEST**. These lists are for distributing transcripts of birdwatching hotlines (over 14 are currently covered) and detailed information about bird sightings across the country. The list **BIRDCHAT** is for more general messages about birding. These lists form part of the National Birding Hotline Cooperative and are moderated by Charles Williamson.

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The two other lists presented in the table, **ETHOLOGY** and **GREEN**, deal with the classification of organisms and the study of the green movement, respectively. **GREEN** is only for the study of green movements, as the **GREEN** announcement states: "It is emphasized that the purpose of Green is the **study** of Green movements. Green is **not** a tool for organizing or promoting those movements."

UPDATES

Bill Thoen, the sysop of **COGSnet BBS (303-740-9493)**, maintains the Earth Science BBS List. Mr. Thoen's list offers detailed information about each BBS. For a list of the more technically oriented BBS relating to conservation (HerpNet, Taxacom, American Int. of Bio. Sci.) check out **The Black Bag BBS (302-731-1998)**.

The newest list of Bitnet lists, sent as several large files, is updated monthly by the BITNET Network Information Center. These files can be obtained through Bitnet by sending the command **SENDME INTEREST PACKAGE** to **LISTSERV@NDSUVM1**. Also a shorter file called **LISTSERV GROUPS** can be obtained by sending the command **SENDME LISTSERV GROUPS** to **LISTSERV@BITNIC**.

[J. Scott Christianson will graduate with a B.A. in biology from the University of Missouri in December and has worked with several conservation organizations in Missouri. Dan Wendling is a media specialist for Macro International, Inc., and works outside Washington, DC. - Editor]

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Republic of South Africa	Henk WOlsink	Catalyst BBS	(041)34-1122
Darwin National BBS List	Meade Frierson	USBBS Update Line	(202)547-3037
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Seattle AC 206/West Washington	Bob Dinse/Nanook	Eskimo North	(206)367-3837
Autocad Related BBS	Jason Osgood	Alacrity BBS	(206)643-5477
Maine BBS	Eric Rodzen	MaineNET BBS	(207)767-1273
Astronomy/Space BBS	John Pickens	Starbase III BBS	(209)432-2487
NY/NJ/CT/PA/DE		Network One BBS	(212)628-5486
Graphical User Interface BBS	David Shapiro	The Gooey (GUI) BBS	(212)876-5885
Southern California	Mike Hefferman	SOCAL Corner	(213)422-7942
Open Access UNIX Sites		LGNP1 (login:GUEST)	(215)348-9727
Area Code 609 - New Jersey	Ron Brandt	Satalink BBS	(215)364-3324
Area Code 215 - Philadelphia	Ron Brandt	Satalink BBS	(215)364-3324
Cleveland Area 216	Eric Rickin	Wine Cellar	(216)382-2558
Handicapped Issues BBS	Richard Barth	HEX BBS	(301)593-7357
Baltimore Area 301	Phillip Bailey	Baltimore BBS News	(301)633-7870
Medical Issues BBS	Edward Del Grosso	Black Bag	(302)731-1998
Detroit Area 313	Horst Mann	Tony's Corner	(313)754-1131
ASP BBS Member List	Bob Ostrander	PBS-BBS	(317)856-2087
Engineering Related BBS	Arthur Petrzelka	Computer Plumber	(319)337-6723
Rhode Island Area 401	Mike Labbe	Eagle's Nest	(401)732-5292
Atlanta Area 404	Online Atlanta Society	OASIS	(404)627-2662
Atlanta Area 404	Rodney Aloia	INDEX System	(404)924-8472
South Florida Area 305/407	Eric Thav	Silicon Beach BBS	(407)276-3750
Milwaukee Area 414	Jim Belot	The Keep BBS	(414)372-3488
Arkansas Area 501	Bob Underdown	The Gaslight BBS	(501)444-8420
Portland Oregon BBS	Lisa Gronke	DawGone Disgusted	(503)297-9145
New Orleans BBS List	Jeff Jones	Southern Star BBS	(504)885-5928
New Mexico Area 505	Frank Lerner	Land of Enchantment	(505)822-8162
Selected BBS	Joseph Caplinger & Son	J&J's BBS	(513)236-1229
List of Gay/Lesbian BBS	Eric Blair	S-TEK BBS	(514)597-2409
The List National BBS List	James Toro	PDSLO (The List)	(516)938-6722
Area Code 517 - Mid-Michigan	Rick Rosinski/SAMM	Wolverine BBS	(517)695-9952
Wisconsin 608		JW-PC Dataflex.HST	(608)837-1923
South Jersey Area 609	Dave Schubert	The Casino EBBS	(609)561-3377
New Jersey Area 201/609/908	Wayne R. Morton	Praedo BBS	(609)953-0769
MIDI Music BBS	Lee Smith	MIDImaze BBS	(615)877-5528
Massachussetts Area 508/617	Dave Goodenough	Wyzard's Castle	(617)825-3135
San Diego, CA AC 619	Ron Dipold	Computor's Edge	(619)573-1675
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OS/2 BBS Systems	Pete Norloff	OS2/Shareware BBS	(703)385-4325
Washington DC BBS List	Mike Focke	Interconnect	(703)425-2505
Geneology Related BBS	Richard A. Pence	NGS-CIG	(703)528-2612
Desktop Publishing BBS	Frank Atlee	Byrds Nest	(703)671-8923
Ontario Area 705	Alex Draper	Cottage Country BBS	(705)835-6192
Amiga BBS Lists	Captain Chet Solace	Exactus Info Service	(707)524-2548
Chicago	Colby Jordan/Peter Anvin	Stillwaters	(708)403-2826
Chicago	David Nathan	HURK BBS	(708)801-0823
Houston Area 713	David E. Wachenschwanz	Atomic Cafe BBS	(713)530-8875
Rochester NY AC 716	Jerry Masefield	Pigeon Coop BBS	(716)262-2612
Central California Area 805	Larry Honore	His Board	(805)652-1478
Kansas City Area 816/913	Roy Timberman	Sound Advice	(816)436-4516
Dallas/Ft Worth Area 214/817	Mark Robbins	Second Sanctum	(817)784-1178
Tulsa Oklahoman Area BBS List	Linda Hargraves	Access America	(918)747-2542
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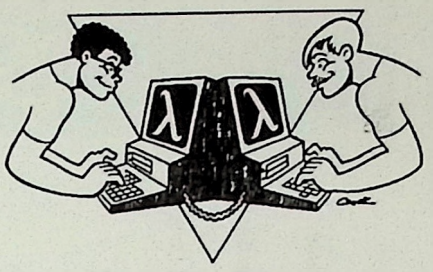

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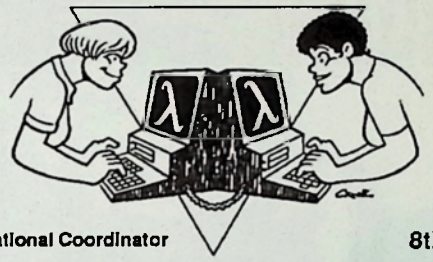

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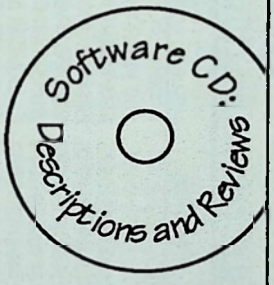

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American Cybernetics BBS	(602)968-1082	Multi-Edit Product Support BBS	American Cybernetics	Tempe ,AZ
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
APCUG - GlobalNet	(408)439-9367	Association of PC User Groups - Over 2000 UG officers	Paul Curtis/APCUG	Scotts Valley ,CA
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Aquila BBS	(708)820-8344	2 GB 14 Nodes Fidonet/Interlink/Metronet MCe IL/CHI Graphics	Kevin Behrens/Steve Williams/Chris Babb	Aurora ,IL
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BellSouth's TUG Gateway	(404)594-3964	Transtext Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta ,GA
Best Friends BBS	(714)832-5902	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Big Peach BBS	(404)446-6650	Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Big Sky Telegraph	(406)683-7680	Education/Econ Development info to Montana rural Communities	Montanna Rural Education Network	Dillon ,MT
Bird Info Network	(303)423-9775	Breeding, Raising, Taming, Exotic Birds	Terry Rune/Dave McClauggage	Arvada ,CO
BMUG BBS	(415)849-2684	Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley ,CA
Boardwatch Magazine Online Info	(303)973-4222	Distribution Service for USA Today/Boardwatch/Closing NYSE	Boardwatch Magazine	Littleton ,CO
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Borland Download BBS	(408)439-9096	Utilities, Macros, Programming Examples for Borland Products	Borland International/Mike Fitz-Enz	Scotts Valley ,CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lornasky	West Hartford ,CT
Bucks Telematics 273/201	(215)493-5242	Local, National, International Message Conferences	Richard Press	Yardley ,PA
C.A.R.L Library Service	(303)863-1350	Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
Canada Remote Systems	(416)798-4713	23 GB/400000+ files, 2500 Conf's,USENET, IBM/Amiga/Mac	Jud Newell	Mississauga ,Ontario
Cape Cod Bungalow 101/870	(508)759-1168	Multiline Service - Shopping Mall - Games - Tourist Info	Crawford Communications/Daniel Crawford	Cape Cod ,MA
Capital PC User's Group BBS	(301)738-9060	One of the oldest PC User's Groups - 5500 members	Capital PC Users Group/Roger Fajman	Rockville ,MD
Castle Tabby 107/412	(201)988-0706	Home of TABBY Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Bradley Beach ,NJ
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Census Bureau Personnel Division	(301)763-4574	Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Central Point Software	(503)690-6850	PC Tools - Central Point Anti-virus support board	Central Point Software Inc.	Beaverton ,OR
Channel 1	(617)354-8873	70-line PCBoard - 8 GB Files - Internet - 1000's msg. confs.	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(312)622-4442	Special Interest Areas for Ferret/Pet Owners.TRS80/Aviation	George Matyaszek	Chicago ,IL
chinet	(312)283-0559	Unix System offering Internet Mail	Randy Suess	Chicago ,IL
Classi Computer Fieds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Clean Air BBS	(408)298-4277	Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose ,CA
Cleveland Freenet	(216)368-3888	Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
CocoNet	(619)456-0815	CocoNet Support/Demo - Hires Graphics BBS for Unix Systems	Brian and Patricia Dear	La Jolla ,CA
Comm-Post, The 104/666	(303)534-4646	Astronomy - 725+ MB of Files	Brian Bartee	Denver ,CO
Community News Service (CNS)	(719)520-5000	News and Entertainment - 17 Lines Community Focus	Klaus Dimmler	Colorado Springs ,CO
Community News Service Denver	(303)457-4000	News - Entertainment - Denver Community Focus 8-Lines	Morgan Doyle	Denver ,CO
Compact Audio Disk Exchange	(415)824-7603	Buy/Sell/Trade Compact Audio Disks Online	Wayne Gregori	San Francisco ,CA
CompuCom Customer Support BBS	(408)738-4990	Support for CompuComm SpeedModem - 9600 bps - $279	CompuCom	Sunnyvale ,CA
Computer Business Services	(714)396-0014	Computer Columnist John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar ,CA
Computer Garden	(301)546-1508	Treasure Hunting - Metal Detectors - Online Catalog	Milford P. Webster	Salisbury ,MD
Computerized Bulletin Board Sys	(708)849-1132	First Electronic Bulletin Board - Creator of XMODEM Protocol	Ward Christensen	Chicago ,IL
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Corporate Data Exchange (CDX)	(609)683-4422	PR Newswire/ Business Wire. Logon: hello user.cdx	LaFountain Research Corp/Tad LaFountain	Princeton ,NJ
Crosstalk Communications BBS	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
CTC IEEE Employment Database	(508)263-3857	Online Database of 20,000 Resumes for Engineering	Career Technologies Corporation	Andover ,MA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - TDBS Applications	Pete White	Holliston ,MA
Dante Project BBS	(603)643-6310	Commentary/Research on Dante's Divinia Comedia	Dartmouth College	Hanover ,NH
Dark Side of the Moon	(408)245-7726	Home of WAFFLE, Unix UUCP BBS Software for DOS and Unix	Thomes E. Dell/Darkside International	Mountain View ,CA
Data Core BBS	(213)842-6880	25 line Major BBS	Matthew Schoen/Delta Enterprises	Los Angeles ,CA
DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX

DayDreamer BBS	886-2-3122452	Ten Line Remote Access BBS - Largest BBS in Taiwan
Denver Deaf-Net	(303)989-9245	Hearing Impaired/Computing
Denver Exchange, The 104/909	(303)623-4965	Denver's Most Diverse Gay/Lesbian Info Service
DigiBoard Support BBS	(612)922-5604	Multiport Serial Cards
DragonNet 386/451	(409)765-5459	Multiline MAJOR BBS with 4 GB - 64 lines Interactive Games
East Bay X-Change 372/888	(803)556-7485	Home of XRS Offline Mail Reader
Echo	(212)989-8411	New York Emulation of THE WELL - Unix CAUCUS Conferencing
Economic Bulletin Board	(202)377-3870	Economic Statistics/GNP/CPI/Employment, Trade Opportunities
Electic Dialectic BBS	(708)705-6774	40 Online Game Doors - Graphic Files
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics
eSoft Product Support BBS	(303)699-8222	Home of The Bread Board System (TBBS) BBS Software
Event Horizons	(503)697-5100	32 Line Digitized Graphics Image Library - Adult .GIF files
Exactus Information Service	(707)524-2548	12,500 Amiga Files - USA Today - Closing NYSE Stocks
Exchange BBS, The	(713)521-2191	Largest Gay/Bi/Lesbian Multiline BBS in Houston
EXEC-PC	(414)789-4210	Largest BBS in US - 230 Lines - 70,000 files - 7 Gigabytes
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System
Eye Contact BBS	(415)255-5972	22 line Oracomm - Gay Issues - Popular Chat System
Falken Support BBS	(703)803-8000	Support for FALKEN software - 16 lines - doors - chat
Farwest BBS	(604)381-3934	Large Western Canada Galacticomm Info System
FAX/Satellite Services BBS	(619)224-3853	NOAA Weather Satellite Images - Russian/Japanese Sat Pics
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service
Federal Job Information Center	(313)226-4423	Federal Job Opportunity Lists available online
FEDLINK ALIX II	(202)707-9656	Info on Federal Libraries -Excerpts Library of Congress News
Fido Software BBS 1:125/111	(415)863-2739	The First Fido BBS and home of Fido BBS 12s
Fido Tech Stand	31-30-735900	Fidonet Technical Information for Holland
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries
Fun Connection	(503)753-8431	Multiline Entertainment - 8 Lines Games/Chat/News
GDP Technologies	(303)673-9470	Outstanding IBM Shareware on a small system
General, The	(619)281-8616	Popular File Library - CompuCom Modem Support Service
Gilmore Systems BBS	(818)706-9805	Support for MAGNUM BBS - OS/2 BBS Software - up to 8 lines
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software
Hay Locator	(317)494-6643	Database of Hay/Straw Suppliers and Buyers
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra
Heartland Free-net	(309)674-1100	Community Online Service - Free Internet E-Mail Boxes
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty
HOLLIS	(617)495-9500	Harvard On-Line Library Information System - 7E1 VT100
IBM National Support Center BBS	(404)835-5300	IBM PC User Groups Database - Newsletter Exchange
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Verticom Graphics Products - .GIFs
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service
Index Systems	(404)924-8414	Excellent list of Atlanta BBS systems online
Infinity World	(606)271-6556	8 line Galacticomm System - Many good text publications
InfoHost Demo BBS	(201)288-7792	Demo BBS for InfoHost BBS Software - Multiline - Database
Infolink for Upper East Tenn.	(615)434-2551	Space Database - Online Store - Chat
Intel PCEO Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286
Invention Factory	(212)431-1194	32 Lines - 100 Directories - Good Shareware Catalog 3.2 GB
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis
JAG-NET	(703)325-0748	Navy Judge Advocate General's Information Network
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes
JEPP/LINK	800-767-7000	7E1 Pilots Weather Service - NWS Data and Maps
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.
Joe's Place BBS 1:367/15.6	(809)254-3566	Colorful Spitfire BBS in Puerto Rico
Keith Graham Shareware Support	(914)623-0039	OPTIK, TEXT2COM, CBOOT, very good shareware utilities
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data
King's Market BBS 104/115	(303)665-6091	400 MB Books, Writers Area - TRS 80 Support
LANtastic BBS	(602)293-8065	Support for LANtastic local area network
Late Night BBS	(315)592-7300	Home of GENESIS BBS Software - Multinode LANable.
Late Night Software 125/555	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet
Leading Edge Auto Info Line	(508)836-3967	Support for Leading Edge Computer Owners
LegalEase	(509)326-3238	Legal issues/Forms - Law BBS List

Allen Wu	Taipei ,Taiwan
David Sheneman	Lakewood ,CO
James Craig	Denver ,CO
DigiBoard Incorporated	St. Louis Park ,MN
Robert Michal/Dragon Profit Systems	Galveston Island ,TX
Mike Ratledge	McClellanville ,SC
Stacy Horn/Echo Communications Group	New York ,NY
US Department of Commerce	Springfield ,VA
Bruce Johnson	Palatine ,IL
US Department of Energy	Washington ,D.C.
Phil Becker/eSoft Inc.	Aurora ,CO
Jim Maxey	Lake Oswego ,OR
David Salas/Robert Cohen	Santa Rosa ,CA
James Craig/John Fields	Houston ,TX
Bob Mahoney	Elm Grove ,WI
Andy Keeves	Mt. Vernon ,NY
Bill Montgomery	Mill Valley ,CA
Herb Rose	Woodbridge ,VA
Ren L'Ecuyer	Victoria ,BC
Scotty Olson	San Diego ,CA
Federal Communications Commission	Columbia ,MD
US Office of Personnel Management	Detroit ,MI
Federal Library Information Network	Washington ,D.C.
Tom Jennings	San Francisco ,CA
J.J. van der Maas	Utrecht ,Holland
Bill Essex	San Francisco ,CA
Middlesex News	Framingham ,MA
Vincent Reece	Corvallis ,OR
Tom Getty's	Lafayette ,CO
Marc Teitler	San Diego ,CA
Chuck Gilmore	Thousand Oaks ,CA
Community Educational Svcs. Foundation	Arlington ,VA
Dick Dillman/Greenpeace	,
Paul Meiners/P&M Software	Houston ,TX
Purdue Univ. Agricultural Computer Net	,,
Hayes Microcomputer Products	Norcross ,GA
Peoria County Board/Bradley University	Peoria ,IL
Mark Miller	Philadelphia ,PA
Lee Winsor	New Hartford ,CT
Harvard University	Cambridge ,MA
IBM National Support Center	Atlanta ,GA
Western Digital	Mountain View ,CA
Harry Newton Publications	New York ,NY
Rodney Aloia	Marietta ,GA
Daniel Diachun	Lexington ,KY
A-Comm Electronics Inc.	Hasbrouch Heights ,NJ
John Williams	Johnson City ,TN
Intel Corporation PCEO Division	Hillsborough ,OR
Mike Sussell	New York ,NY
Don Shepherdson	Bellevue ,WA
US. Dept. of Navy / Chris Buechler	Arlington ,VA
JDR Microdevices	San Jose ,CA
Jeppeson Data Plan Inc.	Los Gatos ,CA
Alpha Systems Inc./Bill Griffin	Roswell ,GA
Jose Frias	Lajas ,PR
Keith P. Graham	Nyack ,NY
Federal Reserve Bank of Minneapolis	Minneapolis ,MN
Jim and Karen Burt	Boulder ,CO
Artisoft Inc.	Tucson ,AZ
Carter Downer	Hannibal ,NY
Tim Pozar	San Francisco ,CA
Leading Edge Computer	Westborough ,MA
Bill Sorcinelli	Spokane ,WA

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - NOVEMBER 1991

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
LUMINA	(612)626-2206	Libraries of Univ.of Minnesota Integrated Net Access7E1VT100	University of Minnesota	Twin Cities ,MN
MAC-LINK	(514)935-4257	Macintosh Oriented Support BBS - 6 Lines - Infomat/BIX	Mark Smith	Montreal ,Quebec
Macalot Bulletin Board	(412)846-5312	Support for Second Sight BBS Software for Macintosh	Jeff Dripps/FreeSoft Company	Beaver Falls ,PA
MacInternational	(803)798-3755	Largest MAC BBS on East Coast	Ralph Yount	Columbia ,SC
Magpie BBS	(212)420-0527	Support/Demo System for Magpie BBS/Conferencing Software	Steve Manes	New York ,NY
Maxi-Micro TickerScreen	(212)809-1160	2000 Closing Stock Quotes/Market Research/Order Entry	Max Ule & Company	New York ,NY
MaxiHost Support BBS	(209)836-2402	MaxiHost BBS - small, very easy to run BBS	Don Mankin	San Ramon ,CA
Maxtor Technical Support BBS	(303)678-2020	Installation/Troubleshooting/Support for Maxtor Hard Disks	Maxtor Corp./Chris Bowers	Longmont ,CO
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP Programs	John McAfee/CVIA	Santa Clara ,CA
METRO Online Entertainment	(212)831-9280	32 line DLX with City Guide/Ski Database - Matchmaker - Chat	Bruce Kamm/Metro Online Services	New York City ,NY
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose ,CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh ,NC
Micro Tech BBS	(314)334-6359	Support for OSIRIS Multiline BBS Software - IRIS Mail	Micro Tech	Cape Girardeau ,MO
Microlink B	(303)972-9600	Over 2.5 GB of IBM Software - Multiline - USA Today News	Girard Westerberg	Littleton ,CO
Microrim Technical Support BBS	(206)649-9836	Support for Popular R:Base Relational Data Base System	Microrim Corporation	Redmond ,WA
Microsoft Product Support BBS	(206)646-9145	Word/Works/Multiplan/Flight Simulator Application Notes	Microsoft Corp/Scott J. Honaker	Bellevue ,WA
Microsystems Software Inc.	(508)875-8009	HandiWare Software for Handicapped - CodeRunner C Utilities	MSI - Reed Lewis	Framingham ,MA
Minnesota Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis ,MN
MOG-UR's EMS	(818)366-1238	4 Lines - 4 Networks CD-ROMS - 1.5 GB Hub Services HST/V.32	Tom Tcimpidis	,
N8EMR Ham BBS	(614)895-2553	login:hbbs HAM Radio/AMSAT Unix System - Satellite/Packet	Gary Sanders	Westerville ,OH
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Navy Regional Data Automation Center	NAS Norfolk ,VA
NASA Headquarters Info Tech	(202)453-9008	Shareware and Technical Info for NASA PC users.	National Aeronautical and Space Admin.	Washington ,DC
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville ,AL
Nashville Exchange	(615)383-0727	8 line TBBS - Games/TDBS Software Development	Ben Cunningham	Nashville ,TN
National Agricultural Library	(301)344-8510	Agricultural Info/Research Resources	US Department of Agriculture	Beltsville ,MD
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington ,VA
Nautilus BBS	(316)365-7631	32 Line TBBS with 5 GB of Files on 80486. CD/WORMS	Nautilus Communications	Iola ,KS
NAVWESA	(202)433-6639	Naval Weapons Engineering Support	Dept. of Navy / Bill Walsh	Washinton, D.C. ,.
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham ,MA
Neuropsychology Bound 157/3	(216)356-1431	Support Groups for Disabled/Physically Impaired	Butch Walker	Rocky River ,OH
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder ,CO
NIST Computer Security	(301)948-5717	Computer Security and Virus Protection Issues	Nat. Institute for Standards/Technology	Gaithersburg ,MD
Nixpix	(303)920-1263	Large Library of Adult GIF Graphics Images	Nick De Wolf	Aspen ,CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder ,CO
NoGate Consulting	(616)530-3392	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Grand Rapids ,MI
North Star BBS	(619)223-5136	San Diego Yachting News Magazine/WriterLink - Macintosh	Robert and Stacy Young	San Diego ,CA
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel ,MD
OAQPSTTN	(919)541-5742	Air Quality Planning and Standards Technology Transfer Net	Environmental Protection Agency	Research Triangle Park ,NC
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBL	Robert Orr/Online Atlanta Society	Decatur ,GA
Occupational Health/Safety BBS	(212)385-2034	Job Safety Issues for Artists, Musicians, Entertainers	Mike McCann/Center for Safety in Arts	New York ,NY
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington ,D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs ,CO
Online Now	(807)345-5522	700 Megs plus 5 CD-ROMS plus 6 MB New Software per Week	Gary Walsh/Tom Haavisto	Thunder Bay ,Ontario
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross ,GA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australia ,
Oracomm Support BBS	(619)346-1608	Sales and Support for Oracomm Multiline BBS Software	Surf Computer Services	Rancho Mirage ,CA
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville ,MD
P.D.S.L.O. BBS	(516)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville ,NY
PacComm BBS	(813)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa ,FL
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 5 years up	Norm Henke	Cleveland ,OH
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ.of Mass. Dept. of Physics/Astronomy	Amherst ,MA
Pinecliffe BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Craig Baker	Pinecliffe ,CO
PKWare BBS	(414)354-8670	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale ,WI
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Tom Terrific	Tidewater ,VA
Popular Mechanics Online BBS	(212)582-8369	Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York ,NY
Practical Peripherals BBS	(818)706-2467	Support BBS for Practical Peripherals Modems	Practical Peripherals	West Lake Village ,CA

ProComm Support BBS	(314)474-8477	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms
Promised Land, The	(715)387-1339	16-Line/2.5GB/11,000+ Files/ WINDOWS, Chat & More
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor
Public Data Network	(503)474-6662	64-line System with $2.50/hour Local Access
QMail Deluxe Support BBS	(901)382-5583	Support for QMail - offline conference mail reader
Qualitas, Inc. BBS	(301)907-8030	386MAX and BlueMAX Memory Management Software Support
QuickBBS Support BBS 363/34	(407)896-0494	Product Support for QuickBBS Software
Random Access Information Svc.	(503)761-8100	10500 IBM/MAC/AMIGA Files - 3000 MaxiPic Graphics
Remote Access HQ 3:690/625	61 9 389 8048	Home of Remote Access BBS Software
RGB Computing	(519)824-3997	Multiline Information Service/PC Sales/Large File Selection.
Rose Media	(416)733-2780	Excellent Canadian PC Board System-Publications/Conferences
Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys
San Diego NeXT User's Group BBS	(619456-2522	Support for NeXT Computers
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics
SEAboard!	(201)473-1991	Support system for ARC, SEADOG, and AXE software.
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models
Searchlight BBS	(516)689-2566	Support system for Searchlight BBS Software
SemWare Support BBS	(404)641-8968	Home of QEdit - A Superb Shareware Text Editor
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS
SNAFU BBS	(202)547-6238	Advice for Government Whistle Blowers - Fouled DOD Programs
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers
Sonshine Express BBS	(415)651-2440	Family Oriented Christian BBS
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems
Southern Arizona Birding BBS	(602)881-4280	Rare Bird Alerts Online - Birdwatching in Southwest
Star-Link Network BBS	(718)972-6099	9-nodes, 2.1GB, Ilink, 75,000 programs
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info
Stillwaters BBS	(708)403-2826	Home of Stillwaters Chicagoland BBS List - over 500 systems
Talk Channel	(818)506-0620	DLX-Based Multiline Chat/Talk Service - Sexual Orientation
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation
TEAMate Unix Bulletin Board	(213)318-5302	Demo/Support for TEAMate BBS Software for Unix
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM
Telepath	(415)364-8315	DBMS/Dr. Dobbs Journal Magazine Online Service
Telix Support BBS	(416)439-8293	Support Service for Telix Communications Software
The Back Room	(718)849-1614	America's Largest Exclusively Gay DB - Home of Gaycomm
The Business BBS	(213)477-0408	Microsoft Windows Support
The Ledge PCBoard	(818)896-4015	Home of Textview Door for PCBoard Systems
The Other BBS 1:1/0	(717)657-2223	Fidonet Zone Coordinator for North America 1:1/0
The Professional System	(303)740-2223	Writers, Lawyers, EDP Auditors
The Well	(415)332-7190	Unix Conferencing System - $10 monthly plus $2.50 Hourly
Town Hall	800-648-6964	Conservative Political Conference and Debate
Trinity 1 BBS	44 392 410210	United Kingdom Distributor of Boardwatch Magazine
TurboTax Support BBS	(619)453-5232	Income tax information - Turbotax 1040 program support
Twilight Zone	(415)352-0433	Rare Bird Alerts - Birdwatching
U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @TCO for Commands
USGS Quick Epicenter Determin.	(800)358-2663	Earthquake Epicenter Data - Geomagnetism7E2
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries
Ventura Professional Forum	(408)227-4818	Ventura Publisher User's Group BBS
Ward and Randy's CBBS	(312)545-8086	World's First and Oldest Micro-based BBS - Since 2/16/78
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data
Western Digital Tech Support	(714)753-1068	Hard Drive/Controller Installation and Config Data
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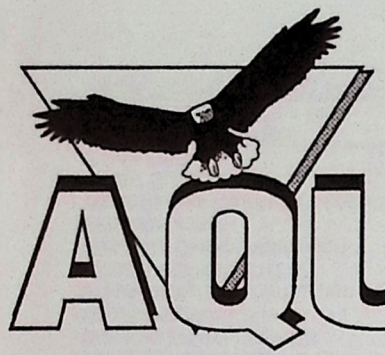

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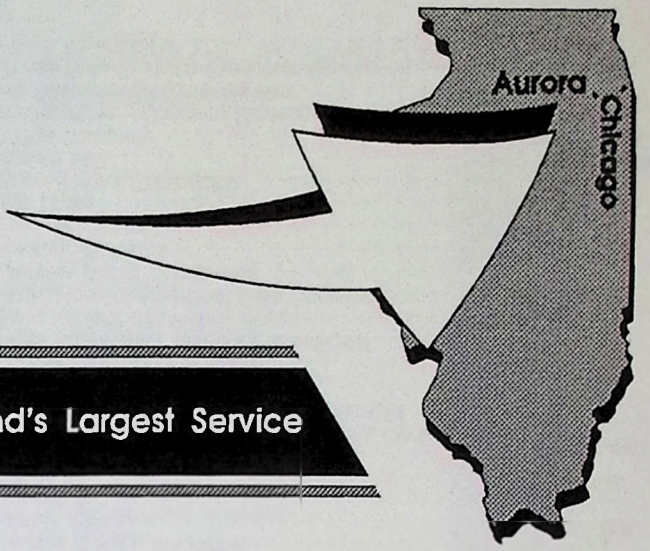

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